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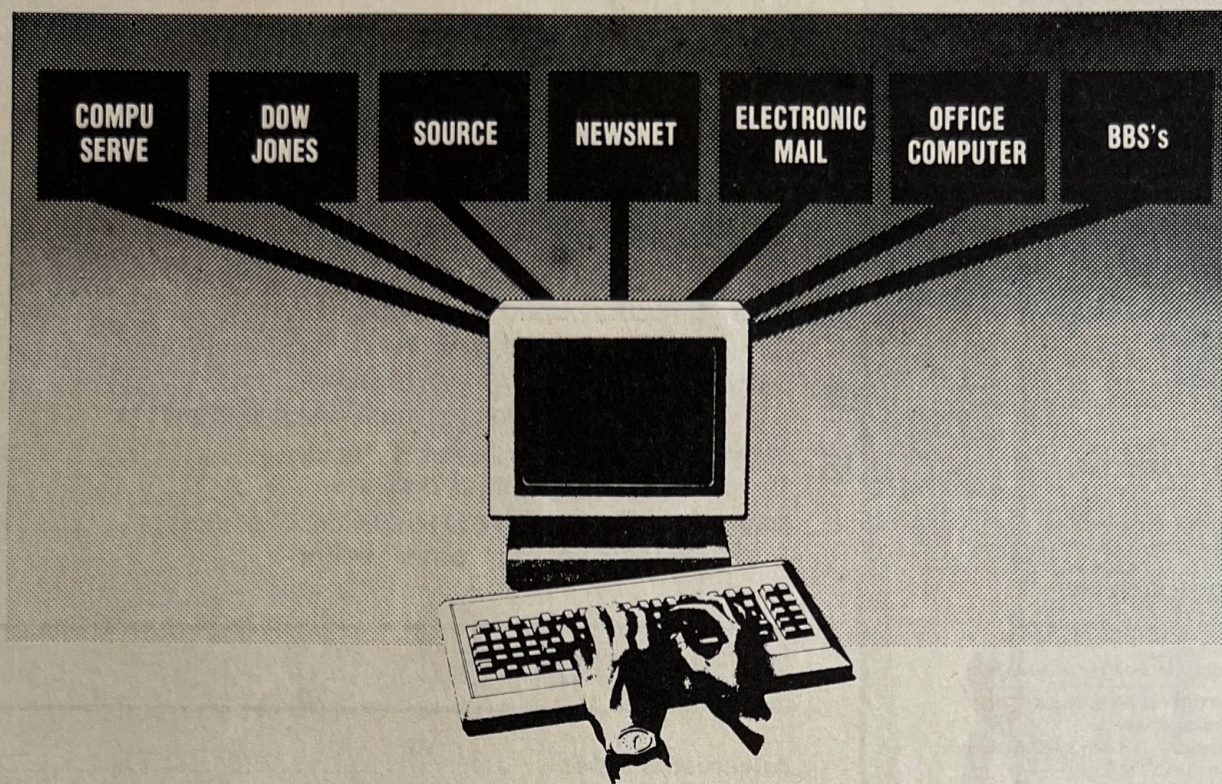
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The Monthly Magazine for
Sanyo Personal Computer Users

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May 1986

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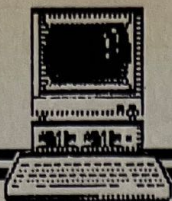
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- The small disk symbols appearing beside features and regular columns indicate that the program listings with those articles are on this month's **SOFT SECTOR ON DISK**, ready to LOAD and RUN. For full details, see the **SOFT SECTOR ON DISK** ad on Page 27.



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Here we are again with two more winners of The Great SOFT SECTOR One-Liner Contest on this page and on page 43.

To briefly restate the rules of the contest, begin the program with a line number and end it in a single line. Anything else goes. Entries will be accepted in either Sanyo BASIC or GW-BASIC. Please include a printed listing, a title for the program and a short explanation of what it does. Send it to The Great SOFT SECTOR One-Liner Contest, P.O. Box 385, Prospect, KY 40059.

one-liner contest

One-Liner

Papers, Mod Art or Chaos?

The hardest part about this One-Liner was coming up with a name! I have named it *Papers* because it reminds me of what my desk at work often looks like during the course of the day with all of the papers, phone messages, forms, meeting notices, memos, etc. that cross it. Other possible names for this routine could be "Mod Art," "Confetti," or even "Chaos." Perhaps we could start the First Great SOFT SECTOR Name-That-Routine contest?

```
1 CLS:LOCATE 1,1,0:DIM P(45):LINE(1,1)-(
2 0,20),3,B:GET(1,1)-(20,20),P:FOR Z=1 TO
3 500:X=RND(Z)*620:Y=RND(Z)*180:PUT(X,Y),
4 P:C=RND(Z)*7:PAINT(X+9,Y+9),C,3:NEXT Z:F
5 OR E=1 TO 9999:IF INKEY$<" " THEN END EL
6 SE NEXT E
```

William D. Cochran
Mesa, AZ

(For this winning one-liner contest entry, the author has been sent a copy of the May edition of SOFT SECTOR ON DISK).

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SOFT SOAPBOX

Since taking over as managing editor of **SOFT SECTOR**, I have been hearing comments along the lines of "the 550's a dead issue, so I'd better buy a PC clone so I won't be stuck with a useless computer." Is such an attitude really justified?

First of all, while it isn't getting the headlines it once did, the Sanyo 550 series (the MBC-555-2 to be exact) is very much alive. Sanyo Business Systems still sells the 555-2 through its dealers. While this might sound like the time when IBM announced it had stopped making the PCjr because it had enough machines in stock, which was followed by cries of "IBM's dropping the PCjr!", Sanyo definitely has not dropped the 555-2.

OK, the 555 can still be bought, but is it still a useful product in this era when everybody makes everything for the IBM PC and for "true compatibles"? From where I stand, it is. It may be obsolete (for that matter, the IBM PC AT is probably obsolete by now), but it still does what it was designed to do.

Let me give you a homely example. I have a 1936 model Silvertone radio, one of the big ones with 12 tubes that tunes long-wave, shortwave and regular broadcast stations. Obviously this Art Deco monstrosity was obsolete long ago; it doesn't have an FM band, and therefore I can't listen to the local FM rock stations on it. This set no longer picks up police calls, because the various police departments went to VHF and UHF long ago. But there are still AM stations as well as shortwave broadcasts from all over the world, and the old Silvertone still receives them quite well. In fact, local AM stations sound better on this console than they do on my new stereo system, which is designed mainly for FM stereo, cassettes and LP records.

Perhaps a 1936-vintage console radio doesn't have much in common with a personal computer, but the point is that there's a big difference between something being "obsolete" and being "useless." If the computer you have now does what you want it to do, do you really need to move on to something more advanced? Different users have different needs, and that's why there are so many different computers out there; some home users are getting by with a \$69 Tandy Color Computer and have no need for anything more, while a few scientists and engineers are using the new \$17,600,000 Cray-2 and could use still more processing power. A lot of people are doing quite well with the Sanyo 550 these days, using *WordStar*, *CalcStar* and the other bundled programs, various PC programs that run with the Video RAM Board (and many that don't need it), and programs they have written themselves.

What about compatibility and expandability, two of the Sanyo 550's supposed weak points? With the Video RAM Board, any PC program (except the few that require a monochrome display board) will display text and graphics normally. There are still some areas of discord involving the keyboard and the serial port, but many PC programs (including almost all BASIC programs, using GW-BASIC) will

run just fine on the 550 with the Video RAM Board. The newest Video RAM Board also expands the 550 to provide 512K of memory, enough for almost any application. Granted, if you need absolute compatibility with the IBM PC you need an IBM PC (actually two or three different versions; there have been some changes made over the past four years), but nearly everybody can live with a little less and a lot of them can get by with a lot less — and the 550 with the Video RAM Board is almost as compatible as some so-called PC clones.

As for expandability, it's quite true that the Sanyo 550 won't accept 2400 Baud internal modem boards, enhanced graphics adapters and 3270 emulation boards. If you need these you also need a computer that will hold them. It's also quite true that many people just don't need them. You can still do an awful lot with 256K, a printer and an external modem.

So is the Sanyo 550 series alive and kicking? It's very much alive, and for many people who simply need a good system and good software at a good price it may still be the best value on the market. For those who need more, Sanyo certainly has a good line of PC compatible machines that stack up well against the competition. All in all, the good old 550 should be with us for some time to come.

— Ed Ellers



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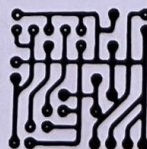
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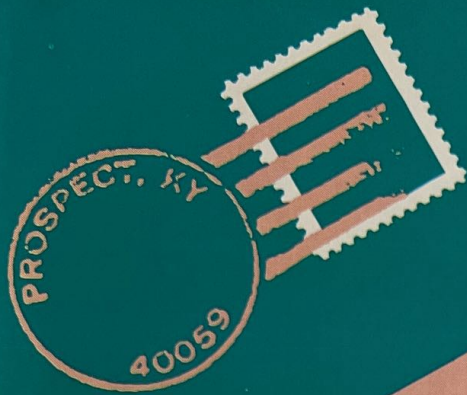
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LETTERS TO THE EDITOR

A DUMMY'S PATCHWORK

Editor:

When I called up John Vandermeersch's dandy little program, *Memo Writer* (February 1986, Page 29), I found myself sitting like a dummy in front of a blank screen. I failed to realize at first that you must have your printer on, or nothing happens. After a couple of frustrating sessions (I don't learn too well) I decided to add three lines to the program to remind me what to do. Here they are:

```
4 CLS
5 PRINT "TURN THE PRINTER ON DUMMY
  - AND PRESS ANY KEY TO CONTINUE"
6 IF INKEY$="" THEN G
```

Now I know what to do when I want to write a memo. Simple, eh?

The author works out of the same office I do, and I'll probably lose a "buddy" for the constructive criticism I am sending to you, but what the heck!

Thanks for a great magazine.

Ken Campbell, CLU
Aylmer West, Ontario

MORE ON V20

Editor:

In reference to Bob Jack's review of the NEC V20 microprocessor (February 1986, Page 39), I would like to add the following comments:

1) When using MichTron's *DS DOS Plus 2.11*, no booting or execution problems occurred.

2) Programs such as *Copylink Plus*, MichTron's *Freeze Frame* and *Cornerman*, along with other programs, ran without problems under *DS DOS Plus 2.11*. I did experience problems with these and other programs when using standard MS-DOS and the Video RAM Board version of MS-DOS.

3) The *DISKCOPY* and *FORMAT* programs used with *DS DOS Plus 2.11* did have to be changed. Thanks to Bob Jack's review, the following offset locations need to be changed using DEBUG:

DISKCOPY.COM: Change locations A04, A4E and A50 from D4 to F6. Change locations A05, A4F and A51 from A0 to EC.

FORMAT.COM: Change locations BBF, C0B and C0D from D4 to F6. Change locations BC0, C0C and C0E from A0 to EC.

In my applications I have not experienced any significant speed increase, but I have noticed improvements in some areas. I'm sure as I use the V20 more I will find other changes.

Rodney Starcher
Akron, OH

DOTS, DASHES AND FLASHES

Editor:

I recently got a Video RAM Board for my Sanyo 550 computer. I am pleased that the IBM PC version of *WordStar* now works on my computer and runs very fast. However, I have noticed that short dashed lines appear on the left side of the screen whenever the screen scrolls or blinks, or any of the keys (even the space bar) are pressed. I do not have this problem when using the original MS-DOS. Is this due to a defect in the Video RAM Board (Version 3) that I have, or does any Video RAM Board cause this problem?

Norio Honjo
Houston, TX

Editor's Note: The flicker you mention is common to all versions of the Video RAM Board and is often seen on Sanyo and other PC-compatible machines, as well as the IBM PC. The problem is that when too much data is sent to the video board, some of it comes in during the time the characters and graphics are being displayed, and the data transfer process interferes with the video generator. Some application programs and utilities are designed to minimize this effect by displaying text more slowly.

ANOTHER SIDEKICK PATCH

Editor:

This note describes a change to Mark Zeiger's *SideKick* patch (April 1985, Page 36). This change replaces the key sequence used in the original patch; I chose the sequence CTRL-\ to invoke *SideKick*.

The keyboard sequence is located at memory location 0110 and, in Mark Zeiger's original patch, is given by the

PAR
AVION

hexadecimal code D2. All you have to do is change the D2 to 1C (the code for the new sequence) using the following DEBUG commands:

```
DEBUG SKGO.COM      This invokes the
                     DEBUG pro-
-E CS:0110           gram
                     Edit the location
                     where the old se-
-1C                  quence is located
                     New key
                     sequence code
-W                   Writes the change
                     to SKGO.COM
-Q                   Exits DEBUG
```

SideKick's ASCII table feature can be used to find the best sequence for you. Of course, make sure you have a copy of the original patch in a safe place in case something goes wrong.

So far I have used WordPerfect, Stata, WordStar, Rats, Lotus 1-2-3, dBASE II and SideKick with the new key sequence and have had no problems. You will have to determine if this new sequence is the best for you, or find a new one that works well and does not interfere with other programs you use.

Brian K. Edwards
Falls Church, VA

... AND ONE FOR KALEIDOSCOPE

Editor:

The Kaleidoscope program (December 1985, Page 13) was even more enjoyable than I expected it to be. I have only had time to work with the eight-fold version, but I am pleased that the author's forewarnings of possible non-painting and bleeding did not occur.

I did not like manually restarting the program and resetting the base for rnd (Line 11) each time. I therefore added the following line: 370 GOTO 20. Now I can engage in other pursuits while keeping an eye on endless, changing kaleidoscopes!

Joseph F. Walsmith
Edgewater, MD

550 ON TAPE

Editor:

In "Input/Output" (December 1985, Page 55), Tim Purves stated that with the Video RAM Board it is possible to record the composite video signal in color on a VCR.

Since I need to display color character graphics, created using the SYMBOL command, on TV sets in schools, I drove 200 miles to try recording from a friend's Sanyo 550 with the Video RAM Board. Perhaps the "composite video output" has

recorded my work in color on the tapes, but I can get nothing on the screen, not even monochrome. (The monochrome output works fine.)

Does the Video RAM Board not accept the SYMBOL command, and does this mean there is no way I can record character graphics in color on a VCR? What am I doing wrong? How do I get it to work?

Tim Purves' columns have prevented "computercide" many times with this hacker, and maybe you can prevent it again.

N. A. Kelly
Denman Island, British Columbia

Editor's Note: The SYMBOL command is available only in Sanyo BASIC, which does not work with the Video RAM Board. While the board certainly can be used for color video applications (as can the IBM PC, the Sanyo 675, 775 and 885 and most other PC compatible computers) when running in Video RAM Board mode, the Sanyo 550's video circuitry — which Sanyo BASIC is designed to drive — does not provide such a composite color output. Sanyo BASIC text and graphics can be recorded in black-and-white, but not in color.

BUBBLES AND MORE BUBBLES

Editor:

I was interested in D.G. Larson's letter (March 1986, Page 9) regarding the bubble sorting routine and his reference to it as "slow." I would like to offer to the readers two routines that appear to be faster, especially for arrays with more

elements. The first is a modification to Larson's bubble sort and the second is a sorting routine referred to as "Shell-Walters."

Here are some run times, in seconds, for sorting 50, 100 and 200 randomly generated elements. These times do not include program overhead, but only the amount of time needed by the sorting portion of the program to complete the sorting task.

	50	100	200
Bubble sort (original)	24	127	355
Bubble sort (modified)	17	72	282
Shell-Walters sort	7	14	37

It appears that the use of SWAP in place of the usual swapping technique for other languages, e.g.: $T=A(I):A(I)=A(I+1):A(I+1)=T$, reduces run time by about 33 percent. The use of WHILE, as in D.G. Larson's routine, does not seem to be faster than the two FOR loops and the IF statement in the included bubble sort. The time savings come when the J loop does not have to return to '1' each time it is called. This is because after the first pass through the data, the smallest element is stored in A(1); after pass two, the second smallest element is stored in A(2), and so on.

The Shell-Walters routine uses a completely different technique that takes some study to fully understand. I would like to note that both of these routines are set up to sort smallest to largest. Small changes in the code can invert the order.

Maj. Robert G. Hughes,
U.S. Air Force
Bellerville, IL

The listing:

```
1000 ' Bubble Sort Routine
1010 FOR I%=1 TO N%-1
1020 II%=0
1030 FOR J% = I%+1 TO N%
1040 IF A(I%) > A(J%) THEN SWAP A(I%),A(J%):II%=-1
1050 NEXT J%
1060 IF II%> -1 THEN GOTO 1080
1070 NEXT I%
1080 RETURN
3000 ' Shell-Walters Sort Routine
3010 J%=N%
3020 J%=INT(J%/3)+1
3030 FOR I% = 1 TO N%-J%
3040 IF A(I%) <= A(I%+J%) THEN 3090
3050 T=A(I%+J%):K%=I%
3060 A(K%+J%)=A(K%):K%=K%-J%
3070 IF K%>0 THEN IF T < A(K%) THEN 3060
3080 A(K%+J%)=T
3090 NEXT I%
3100 IF J% > 1 THEN 3020
3110 RETURN
```


DISK LABEL MAKER

*A simple but useful utility
to help make your software
collection much more
manageable*



By Leonard Hyre

Disk Label Maker is a simple but useful utility for the Sanyo 550/555 computer. Readable and meaningful labels on your disk collection make a growing software collection much more manageable.

Let me give you an example from my own files, using *WordStar*. I have the original supplied with my Sanyo plus a backup of the original for protection against a crash. Then there is the basic working version with the Prowriter printer installation and black-on-yellow text. My wife prefers white-on-black text and black-on-green menus, so that involves

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another disk. Add in the data disks and you see what I mean.

Writing a program to make labels for disks is a simple task. However, with Sanyo BASIC available, the urge to go a few steps further is irresistible. There are just too many neat commands (I finally overcame using the term "powerful").

The program must be easy to use and produce clean and usable labels. The disk title should be double-sized and centered. Three comment lines provide enough space to fully identify the disk contents. These are centered below the title. Another desirable feature is the ability to preview a label prior to printing. This way, we can avoid printing labels with out-of-balance lines, etc.

Sanyo BASIC provides the SYMBOL command to solve the problem of displaying a double-sized title and regular text on the screen in relative position and size. The disk title (N\$) is converted to and centered in the subroutine beginning on Line 840. The regular text is centered and

positioned below the title in lines 890-920. The "screen preview" is shown on a white label, created with a simple white box, created with LINE and the BF option. After the user is shown the label, we either print it or not, then clear the input area and label area for further use. The data input area is cleared with a loop printing spaces in the proper background color. We just need to redraw the label (white box).

Sanyo BASIC provides the means to make even simple utilities like *Disk Label Maker* attractive and colorful. With all those great graphics capabilities inherent, it seems a waste to make a boring program.

I hope you find *Disk Label Maker* a valuable addition to your software collection. If you have ideas for improvement or other comments concerning the program, please drop me a line. I always enjoy hearing from other computer users and can even stand constructive criticism now and then.

DISK LABELER

UTILITY PROGRAM

SANYO 550/555

AAAAAAAAAAAAAA

The listing:

```

10 ' *****
20 ' *
30 ' *          DISK LABEL MAKER          *
40 ' *          by  LEONARD HYRE          *
50 ' *
60 ' *****
70 '
80 '
90 '
100 DEFINT V,W,Z
110 '*****          C A U T I O N          *****
120 '*** PROWRITER PRINTER CODES IN LISTING ***
130 '***          CHANGE FOR YOUR PRINTER          ***
140 '
150 '
160 '
170 '*** SET UP SCREEN & CHECK FOR PRINTER ***
180 '
190 '
200 COLOR 4,0
210 CLS
220 SYMBOL(2,20),"The DISK LABEL MAKER",4,3,4,0
230 GOSUB 770
240 SYMBOL(2,42),"~~~~~",4,3,1,0
250 LOCATE 24,1:PRINT" DISK LABEL MAKER by L. Hyre.....Requires SANYO 550/555 Co
mputer w/Sanyo Basic "
260 BEEP:COLOR 6,0
270 LOCATE 1,1:PRINT"IS THE PRINTER ON ? { Y/N }"
280 AN$= INKEY$:IF AN$="" THEN 280
290 IF AN$="N" THEN LOCATE 2,1:PRINT"WELL! Turn it on!!!";LOCATE 2,21:FOR T= 1
TO 2:FOR S=1 TO 5:OUT &H38,1:NEXT:FOR DL=1 TO 40:NEXT:NEXT:FOR DL=1 TO 200:NEXT:

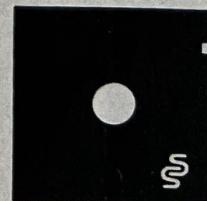
```



```

LOCATE 2,1:COLOR ,0:PRINT SPACE$(28);
300 LOCATE 1,1:PRINT SPACE$(28);
310 COLOR 1,6
320 '
330 '*** INPUT DATA ***
340 '
350 LINE(188,115)-(442,165),7,BF
360 LOCATE 9,2:INPUT"DISK NAME";N$
370 LOCATE 10,2:INPUT"COMMENT LINE 1";C1$
380 IF LEN(C1$)>30 THEN LOCATE 10,50:COLOR 4:PRINT"SORRY--TO LONG (30 MAX.)";:BE
EP:FOR DL=1 TO 700:NEXT:LOCATE 10,17:COLOR 1:PRINT SPACE$(62);:GOTO 370
390 LOCATE 11,2:INPUT"COMMENT LINE 2";C2$
400 IF LEN(C2$)>30 THEN LOCATE 11,50:COLOR 4:PRINT"SORRY--TO LONG (30 MAX.)";:BE
EP:FOR DL=1 TO 700:NEXT:LOCATE 11,17:COLOR 1:PRINT SPACE$(62);:GOTO 390
410 LOCATE 12,2:INPUT"COMMENT LINE 3";C3$
420 IF LEN(C3$)>30 THEN LOCATE 12,50:COLOR 4:PRINT"SORRY--TO LONG (30 MAX.)";:BE
EP:FOR DL=1 TO 700:NEXT:LOCATE 12,17:COLOR 1:PRINT SPACE$(62);:GOTO 410
430 '
440 '*** LET USER PREVIEW LABEL ***
450 '
460 GOSUB 840
470 GOSUB 890
480 LOCATE 22,2:COLOR 7,0:PRINT "PRINT THIS (Y/N) ?":LOCATE 22,21
490 AN$=INKEY$:IF AN$=""THEN 490
500 LOCATE 22,2:COLOR ,0:PRINT SPACE$(19);:IF AN$="Y"OR AN$="y" THEN 540 ELSE GO
SUB 770:GOTO 350
510 '
520 '*** LOOKS OK---PRINT IT! ***
530 '
540 Z=17-LEN(N$):LPRINT STRING$(Z," ");
550 LPRINT CHR$(14);CHR$(27);CHR$(33);: '<- PROWRITER DBLE WDTN/BFACE CODES
560 LPRINT N$:LPRINT CHR$(15);CHR$(27);CHR$(34);: '<-PRO DBLE WDTN/BFACE OFF CODE
570 Z=17-(LEN(C1$)/2):LPRINT STRING$(Z," ");
580 LPRINT CHR$(27);CHR$(78);C1$
590 Z=17-(LEN(C2$)/2):LPRINT STRING$(Z," ");
600 LPRINT C2$
610 Z=17-(LEN(C3$)/2):LPRINT STRING$(Z," ");
620 LPRINT C3$
630 LPRINT:LPRINT
640 '
650 '*** ARE YOU FINISHED PRINTING LABELS ? ***
660 '
670 COLOR 4,6:LOCATE 13,2:PRINT"ANOTHER LABEL < Y/N > ?";
680 AN$=INKEY$:IF AN$="" THEN 680
690 IF AN$="Y" OR AN$="y" THEN GOSUB 770 ELSE 720
700 GOTO 350
710 RETURN
720 LOCATE 14,2:PRINT"OK....."
730 GOTO 730
740 '
750 '*** WIPE OUT THE LAST DATA INPUT ***
760 '
770 LOCATE 8,1:COLOR ,6:FOR X=8 TO 14:PRINT SPACE$(80);:NEXT X
780 BEEP:COLOR 1
790 RETURN
800 '
810 '*** CENTER THE DOUBLE SIZE TITLE FOR PREVIEW SCREEN ***
820 '
840 W=LEN(N$):NPL=320-(W*8):SYMBOL (NPL,120),N$,2,2,0
850 RETURN
860 '
870 '*** CENTER THE REGULAR SIZE PRINT FOR PREVIEW SCREEN ***
880 '
890 COLOR 0,7:V=40-LEN(C1$)/2:LOCATE 18,V:PRINT C1$;
900 V=40-LEN(C2$)/2:LOCATE 19,V:PRINT C2$;
910 V=40-LEN(C3$)/2:LOCATE 20,V:PRINT C3$;
920 RETURN

```



The Computerized Ledger Book

By Fred Blechman
Soft Sector Contributing Editor

*Record keeping
for your home business
can be a breeze
with this easy-to-learn
and versatile program*

If not for the IRS, I wouldn't keep books at all! Operating a small home-based business with no employees is simple and has many tax advantages — but some record keeping is required to justify deductible expenses and provide the figures for the required IRS Schedule C with your tax return. Faced with the need, I originally wrote this program in TRS-80 Model I BASIC to

do the necessary record keeping with a minimum of time, effort and cost. This is an expanded Sanyo BASIC version.

The Old Way

For 17 years I used a simple 12-column method to record income and expenses for my Amway direct distributorship, and (in later years) for my "Blechman Enterprises" microcomputer software business. Income itself is very straightforward. It's merely the total of all sales — wholesale and retail — plus any bonuses received.

Expenses, however, require more detail. Bookkeepers and accountants seem to insist on using dozens of expense account numbers. I suspect this may serve to create a mystique about their work that will keep you from ever considering doing it yourself! They also use "double-entry bookkeeping," with balancing of debits and credits. Income and expense I can understand, but all this other jargon

leaves me cold, so I just keep things very simple.

My handwritten 12-column ledger book used Column 1 for the total expense amount, and the other 11 columns were expense categories, such as merchandise, office expense, utilities, promotion, petty cash, etc. I simply wrote the date, check number and description, followed by the amount in Column 1, then wrote the amount again under the appropriate category column.

If an expense was split between categories (such as a telephone bill, which might be partly business use and partly personal use) each portion was listed under the appropriate heading. I used a column headed "draw" for non-deductible personal expenses, such as transfers to another bank or savings account, or cash drawn for personal use. In all these years, I've yet to find an expense I couldn't fit into one or more of the 11 categories.

Fred Blechman, an acknowledged authority on home computers, has written several articles and books related to microcomputers. He is self-taught in electronics and computer BASIC programming and specializes in writing for beginners. Fred may be contacted at 7217 Bernadine Ave., Canoga Park, CA 91307; (818) 346-7024.

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Enter the Computer

All this still involved considerable time and effort to hand-enter the numbers, total all columns per page, add page totals for monthly totals, then add monthly totals for annual totals to use on the Schedule C. Keeping track of all these numbers seemed like a natural job for a computer, but all the accounting programs I found were too complicated. So I wrote my own program.

The *24-Column Ledger Program* completely replaces my ledger book. It prints out individual 8½ by 11-inch sheets using only 80 characters on a line, so most printers can be used.

The program is written in Sanyo BASIC, but can be used with IBM BASIC (or GW-BASIC with the Video RAM Board on Sanyo 55x) by changing only one program line. Originally written as a 12-column ledger, to simulate my 12-column

written ledger book, this version has been expanded to 24 columns for those who want the extra columns.

This is a Ledger?

A conventional ledger page consists of titled columns of numbers. Since 24 columns of numbers ranging to 99,999,999.99 for each column needs over 288 character spaces per line, printers limited to 80 characters per line (or even 132 condensed characters) could not use this format. Instead, this program runs on conventional 80-character-line printers, with column headings and totals at the bottom of each page. Unconventional, perhaps, but very practical.

Ledger Format

Figure 1 shows a typical page with just a few entries, and page/month/grand totals, just to illustrate the layout. An

actual ledger would have about 45 or 50 entries on a page, with page totals at the bottom.

The format is easy to read, compact and complete. Each line contains the date, check number (or '-' if cash), the amount, to whom and for what purpose and column numbers 2-24. The amount is shown in two decimal places with aligned decimal points. When totals are requested, columns 1-12, with complete headings (up to 12 characters per heading) appear along the left side of the printer sheet, and columns 13-24 appear in the center of the sheet. All totals include two decimal places, with aligned decimal points.

The maximum amounts and totals are 99,999,999.99 for each column. After the page totals, you can make additional entries, additional pages and additional months. Following page totals are monthly totals. After any monthly total, you can request a grand total. These ledger sheets replace a ledger book; just clip them together to make your own "book."

If you ever need a breakdown of a page total, just look at the column numbers along the right side of the page. If you want the items that create the total of Column 2, for example, look for a '2' in the right column and those are the items, including date, check number, purpose and amount. Isn't that simple?

Running the Program

Optional screen instructions (figures 2a and 2b) provide the essential information as a refresher if you haven't used the program for a while. Practice with the column headings in DATA statement program lines 3060-3095, then change them for your own needs. Be sure there are three column numbers and headings per DATA line for a total of 24 — and don't forget the commas between the entries, as shown. Try to limit each column heading title to 12 characters, although a few more than that can appear on the printer and the screen. Column 1 is always "total." The headings shown are the ones used for my own business.

If you're starting at the beginning of a year, bypass the "previous grand totals" option. If you wish to enter previous totals, the program requests an entry for each column by column number and heading.

Figure 3 shows a typical entry screen. The screen clears and shows all categories by title and number, followed by a reminder of how to obtain page totals. A dotted line is drawn on the screen, followed by the contents of the last line and the next printer line number. This lets you know where you are on the printed page, so a total can be obtained if you're getting near the bottom of the page. If you pass Line 52, the printer automatically advances to the next page so totals aren't split between pages.

Next are input prompts and verification. Be sure to use a comma after DATE

BEGINS NEW PAGE...

DATE	CHECK#	AMOUNT	TO WHOM AND PURPOSE	COLUMN #
1/1	119	125.67	AMWAY - MERCHANDISE	2
1/2	120	7.89	POST OFFICE - PACKAGE TO JONES	5
1/4	-	12.94	LUNCH - JIM SMITH (RECRUITING)	4
1/6	121	36.15	PACIFIC TELEPHONE - BUSINESS	7
1/6	121	10.60	PACIFIC TELEPHONE - PERSONAL	12
1/8	122	0.00	VOID	12
1/9	123	100.46	HARRIS AUTO - REPAIRS	10

* PAGE TOTALS *

1-TOTAL AMOUNT	293.71	13-NOT USED	0.00
2-MERCHANDISE	125.67	14-NOT USED	0.00
3-BONUSES PAID	0.00	15-NOT USED	0.00
4-PROMOTION	12.94	16-NOT USED	0.00
5-DELIV/POST	7.89	17-NOT USED	0.00
6-OFFICE	0.00	18-NOT USED	0.00
7-UTILITIES	36.15	19-NOT USED	0.00
8-TAX/INS/LIC	0.00	20-NOT USED	0.00
9-PETTY CASH	0.00	21-NOT USED	0.00
10-MARK IV	100.46	22-NOT USED	0.00
11-AUTO	0.00	23-NOT USED	0.00
12-DRAW	10.60	24-NOT USED	0.00

** MONTH TOTALS **

1-TOTAL AMOUNT	293.71	13-NOT USED	0.00
2-MERCHANDISE	125.67	14-NOT USED	0.00
3-BONUSES PAID	0.00	15-NOT USED	0.00
4-PROMOTION	12.94	16-NOT USED	0.00
5-DELIV/POST	7.89	17-NOT USED	0.00
6-OFFICE	0.00	18-NOT USED	0.00
7-UTILITIES	36.15	19-NOT USED	0.00
8-TAX/INS/LIC	0.00	20-NOT USED	0.00
9-PETTY CASH	0.00	21-NOT USED	0.00
10-MARK IV	100.46	22-NOT USED	0.00
11-AUTO	0.00	23-NOT USED	0.00
12-DRAW	10.60	24-NOT USED	0.00

*** GRAND TOTALS ***

1-TOTAL AMOUNT	293.71	13-NOT USED	0.00
2-MERCHANDISE	125.67	14-NOT USED	0.00
3-BONUSES PAID	0.00	15-NOT USED	0.00
4-PROMOTION	12.94	16-NOT USED	0.00
5-DELIV/POST	7.89	17-NOT USED	0.00
6-OFFICE	0.00	18-NOT USED	0.00
7-UTILITIES	36.15	19-NOT USED	0.00
8-TAX/INS/LIC	0.00	20-NOT USED	0.00
9-PETTY CASH	0.00	21-NOT USED	0.00
10-MARK IV	100.46	22-NOT USED	0.00
11-AUTO	0.00	23-NOT USED	0.00
12-DRAW	10.60	24-NOT USED	0.00

Figure 1
Sample ledger output showing
only seven entries

and another comma after CHECK#, and press the RETURN key after the amount. When entering "to whom and purpose" information, don't type beyond the end of the dotted screen line above or the printer format might be disrupted for that line.

You can get page totals by typing TOTAL,0,0 and pressing the RETURN key at any DATE,CHECK#,AMOUNT? prompt. This is followed by additional entries, additional pages or monthly totals. Enter a minus amount to subtract an entry error.

The program requires no special equipment and should run easily in a single-drive 128K Sanyo MBC-550. Disks are not used during operation, and nothing (except the program) is saved on disk. Everything you need is sent to the printer.

Other Computers

The program has been intentionally left without frills or disk files to make it easy

sion 24 A\$ array locations (actually 25 if you include A\$(0), which is not used). Lines 130-185 define strings for PRINT USING and initialize program variable values at zero.

Lines 200-220 and 7000-7300 provide optional screen instructions. The PL=1 at the end of Line 205 establishes printer line counter variable, PL, to a value of one. Lines 300, 310 and 3000-3095 display the column numbers and headings held in easily changed DATA statements.

Lines 400-420 and 4000-4140 allow entry of the grand totals from your last run. This saves the trouble of making a disk file at the end of each run to preserve totals for later use. It's simpler to just hand-enter the grand totals from your last ledger sheet than to try and locate and load a disk file probably made months before. With this technique you can stop the ledger any time and start again with

```

24-COLUMN LEDGER
***** TURN ON PRINTER!!! *****

DO YOU WANT INSTRUCTIONS (Y/N)? Y

THIS PROGRAM, USED WITH YOUR PRINTER, PRODUCES AN INCOME
OR EXPENSE LEDGER FOR HOME OR SMALL-BUSINESS USE. YOU MUST
HAVE AN 80-COLUMN PRINTER ON AND READY....

THE PROGRAM KEEPS TRACK OF 24 'COLUMNS'. COLUMN 1 IS
ALWAYS THE AMOUNT. COLUMNS 2-24 ARE THE CATEGORIES THIS AMOUNT
MIGHT FALL INTO. COLUMN HEADINGS ARE ASSIGNED IN DATA LINES
3060-3095, WHICH YOU CAN CHANGE FROM THE KEYBOARD BEFORE
ACTUALLY USING THE PROGRAM. HOWEVER, FIRST PRACTICE WITH THE
HEADINGS ALREADY ASSIGNED. (MAX. 12 CHARACTERS PER HEADING!)

PRESS ENTER TO CONTINUE....?

ENTER THE FOLLOWING FOR EACH AMOUNT:
DATE (MM/DD).....(COMMA)
CHECK # (OR USE - FOR CASH).....(COMMA)
AMOUNT (XXXXX.XX).....(ENTER)
TO WHOM - PURPOSE.....(ENTER)
COLUMN # (2-24 ONLY!).....(ENTER)

ENTER.....TOTAL,0,0.....FOR PAGE TOTALS

PRESS ENTER TO CONTINUE.....?

```

Figure 2a
Screen Instructions

to use with other microcomputers. To use this program on an IBM PC or compatible, change the ampersands (&) in Line 130 to back slashes (\). For other microcomputers, formatting might have to be modified (since the PRINT USING line formatting statement in Line 130 is not available on some other micros), or the ampersands might need to be changed to another character. The TRS-80 Models III and 4, for example, use the percent sign (%) instead of the ampersand for PRINT USING string placement.

Double-precision is used for all ledger entries, or numbers above 9999.99 would lose penny accuracy and numbers over 99,999.99 would lose dollar accuracy.

Modular Program

The program is largely modular. Lines 110 and 120 initialize 400 bytes of string space (needed by some micros), define the double-precision variables, and dimen-

previous totals as a new beginning.

If your business is small, you may not need or want to bother with monthly totals — just use page totals and grand totals, and ignore the "monthly" totals. If previous grand totals are entered, lines 2170-2190 and 1680-1790 print these totals at the top of the printer page, so you have a record of starting values.

Line 500 starts with a GOSUB 5000. Lines 5000-5050 check to see if the printer has gone past printer line 52. If it has a CHR\$(12), recognized by most printers as a form feed, it is issued to advance to the next printer page. If not, the program merely returns to the remainder of Line 500. Notice the end of Line 500 advances the printer line counter by two, since two lines are printed by Line 500. Throughout the program wherever the printer is used, PL is advanced by the appropriate number.

Lines 510-540 reset variables for a new

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There seems to be no end to the versatility of the basic Sanyo 550 series. Our latest edition of the Silver Fox illustrates this with the addition of the Tandon TM-262 20 MB Winchester and a total of 768K of RAM!

Enjoy the freedom of being able to boot up to your hard disk and eliminate the headaches of too much information and not enough space. Create RAMdisks of up to 384K with Turbodrive 550. Feel the security of a one year warranty on the whole system.

The Silver Fox has always been fast, responsive and rugged - ideally suited to those who don't want to pay "Big Blue for nothing new". That tradition is now carried 20 megabytes further with the new **Silver Fox II**.

Call now and find out how the Silver Fox II can fit your needs.

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StarPack Software **\$98**
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page and lines 550 and 560 provide printer headings. Lines 600-670 display column numbers and headings and the "for page totals:" command, then draw a dotted line across the screen and display the last line entry. (On a new page, the last line entry is blank, with zero for the amount and column numbers.) Line 680 shows the next printer line number as a reference. You can command page totals any time, but if you go past printer line 52, the paper advances automatically. This leaves space at the bottom of a typical 66-line page for totals.

Lines 1000-1050 provide multiple input prompts and verification. Line 1010 allows totals to be requested. Line 1060 allows escape back to the initial prompt, without changing totals, if an entry error is made.

Lines 1070-1240 print the input information and update all column totals. Lines 1500-2030 print page, monthly or grand totals (depending on the status of variable flags MM and PP) with column headings. The PRINT USING statements use S\$ and N\$ defined in lines 130 and 140 for proper formatting and decimals.

Lines 2040-2250 provide options for more page entries, additional pages, monthly totals, grand totals, another month and program termination.

Fire Your Accountant?

This program is not intended to replace your bookkeeper or accountant if your business requires a finer breakdown of expenses or must handle payroll deductions. I've found it entirely practical for my business. I also use it to define and total deductible household expenses.

You could use this program to determine home budget allocations and performance. And, of course, it could be used to tabulate and total various incomes as well as expenses. It is, in effect, a 24-column worksheet designed to fit on a standard sheet of paper. It's easy to learn, "crashproof" (just GOTO 600 without loss of any totals) and it's versatile.

AS YOU CONFIRM EACH BLOCK OF INFORMATION REQUESTED BY THE PROGRAM, A SINGLE LINE CONTAINING THIS INFORMATION IS PRINTED ON STANDARD 8-1/2 INCH WIDE PAPER. PRINTER LINE NUMBERS ARE SHOWN FOR EACH ENTRY SO YOU KNOW WHERE YOU ARE ON THE PRINTED PAGE. WHEN YOU REQUEST TOTALS, EACH COLUMN HEADING WILL BE PRINTED WITH THE TOTAL FOR EACH COLUMN FOR THAT PAGE. YOU CAN THEN REQUEST ADDITIONAL PAGES. IF NOT, MONTHLY TOTALS WILL BE PRINTED. YOU THEN CAN DO ANOTHER MONTH, OR PRINT GRAND TOTALS OR EXIT THE PROGRAM....

THE FORMAT ALLOWS TOTALS TO \$99,999,999.99!!

** CRASH RECOVERY: TYPE.... GOTO 600AND ENTER.

PRESS ENTER TO CONTINUE....?

THESE ARE THE HEADINGS ENTERED IN DATA LINES 3060 TO 3095.
.....CHANGE THEM IF NECESSARY.....

COLUMN 1-TOTAL AMOUNT	COLUMN 13-NOT USED
COLUMN 2-MERCHANDISE	COLUMN 14-NOT USED
COLUMN 3-BONUSES PAID	COLUMN 15-NOT USED
COLUMN 4-PROMOTION	COLUMN 16-NOT USED
COLUMN 5-DELIV/POST	COLUMN 17-NOT USED
COLUMN 6-OFFICE	COLUMN 18-NOT USED
COLUMN 7-UTILITIES	COLUMN 19-NOT USED
COLUMN 8-TAX/INS/LIC	COLUMN 20-NOT USED
COLUMN 9-PETTY CASH	COLUMN 21-NOT USED
COLUMN 10-MARK IV	COLUMN 22-NOT USED
COLUMN 11-AUTO	COLUMN 23-NOT USED
COLUMN 12-DRAW	COLUMN 24-NOT USED

***** PRESS ENTER TO CONTINUE...?

***** TURN ON PRINTER OR PROGRAM WILL 'FREEZE'!! *****

DO YOU HAVE PREVIOUS *** GRAND TOTALS *** TO ENTER (Y/N)? N

Figure 2b
Additional Instructions

1-TOTAL AMOUNT	7-UTILITIES	13-NOT USED	19-NOT USED
2-MERCHANDISE	8-TAX/INS/LIC	14-NOT USED	20-NOT USED
3-BONUSES PAID	9-PETTY CASH	15-NOT USED	21-NOT USED
4-PROMOTION	10-MARK IV	16-NOT USED	22-NOT USED
5-DELIV/POST	11-AUTO	17-NOT USED	23-NOT USED
6-OFFICE	12-DRAW	18-NOT USED	24-NOT USED

....FOR PAGE TOTALS: TOTAL,0,0 ENTER

LAST ENTRY: 1/1,119, 125.67 ,AMWAY - MERCHANDISE...COLUMN 2
...NEXT PRINTER LINE # IS... 6

DATE,CHECK#,AMOUNT? 1/2,120,7.89
TO WHOM - PURPOSE.....? POST OFFICE - PACKAGE TO JONES
COLUMN? 5
CORRECT? (Y/N)? Y

Figure 3
Typical Entry Screen

The listing:

```

100 REM *****
101 REM *                24-COLUMN LEDGER PROGRAM                *
102 REM * COPYRIGHT FRED BLECHMAN 1986 * VERSION 2/15/86 *
103 REM *                SANYO MBC 550/555 VERSION                *
104 REM *                (AMWAY HEADINGS USED IN DATA LINES)      *
105 REM *****
110 CLEAR 400
120 DEFDBL A-X:DIM A$(24)
130 S$="&                &    ##,###,###.##                &                &    ##,###,###.##"
140 N$="##,###,###.##"
150 REM * INITIALIZE VALUES AT ZERO *
160 A=0:B=0:C=0:D=0:E=0:F=0:G=0:H=0:I=0:J=0:K=0:L=0
162 M=0:N=0:O=0:P=0:Q=0:R=0:S=0:T=0:U=0:V=0:W=0:X=0
164 MM=0:PP=0:RR=0:WW=0:XX=0:YY=0:SP=0
170 SM=0:B1=0:C1=0:D1=0:E1=0:F1=0:G1=0:H1=0:I1=0:J1=0:K1=0:L1=0
175 M1=0:N1=0:O1=0:P1=0:Q1=0:R1=0:S1=0:T1=0:U1=0:V1=0:W1=0:X1=0
180 SG=0:B2=0:C2=0:D2=0:E2=0:F2=0:G2=0:H2=0:I2=0:J2=0:K2=0:L2=0
185 M2=0:N2=0:O2=0:P2=0:Q2=0:R2=0:S2=0:T2=0:U2=0:V2=0:W2=0:X2=0
200 CLS:PRINT :PRINT "                24-COLUMN LEDGER":PRINT

```



```

205 PRINT:PRINT"                ***** TURN ON PRINTER!!! *****":PRINT:PL=1
210 PRINT:INPUT "DO YOU WANT INSTRUCTIONS (Y/N)";A$
220 IF LEFT$(A$,1)="Y" GOTO 7000
300 CLS:PRINT "THESE ARE THE HEADINGS ENTERED IN DATA LINES 3060 TO 3095."
310 PRINT "          .....CHANGE THEM IF NECESSARY.....": GOTO 3000
400 CLS:PRINT :PRINT "                ***** TURN ON PRINTER OR PROGRAM WILL 'FREEZE'!! *****
*"
410 PRINT :INPUT "DO YOU HAVE PREVIOUS *** GRAND TOTALS *** TO ENTER (Y/N)";O$
420 IF LEFT$(O$,1)="Y" GOTO 4000
500 GOSUB 5000:CLS:LPRINT " ":LPRINT "          BEGINS NEW PAGE...":PL=PL+2
510 A=0:B=0:C=0:D=0:E=0:F=0:G=0:H=0:I=0:J=0:K=0:L=0
515 M=0:N=0:O=0:P=0:Q=0:R=0:S=0:T=0:U=0:V=0:W=0:X=0:SP=0
520 IF LEFT$(R$,1)="Y" THEN SM=0:B1=0:C1=0:D1=0:E1=0:F1=0
530 IF LEFT$(R$,1)="Y" THEN G1=0:H1=0:I1=0:J1=0:K1=0:L1=0
533 IF LEFT$(R$,1)="Y" THEN M1=0:N1=0:O1=0:P1=0:Q1=0:R1=0
536 IF LEFT$(R$,1)="Y" THEN S1=0:T1=0:U1=0:V1=0:W1=0:X1=0
540 XX=0:YY=0:PP=0:MM=0:RR=0:R$=""
550 GOSUB 5000:LPRINT " ":LPRINT "DATE";TAB(6)"CHECK#";TAB(19)"AMOUNT";
560 LPRINT TAB(32)"TO WHOM AND PURPOSE";TAB(60)"COLUMN #":PL=PL+2
600 CLS:PRINT A$(1),A$(7),A$(13),A$(19)
610 PRINT A$(2),A$(8),A$(14),A$(20)
620 PRINT A$(3),A$(9),A$(15),A$(21)
630 PRINT A$(4),A$(10),A$(16),A$(22)
640 PRINT A$(5),A$(11),A$(17),A$(23)
650 PRINT A$(6),A$(12),A$(18),A$(24)
660 PRINT "...FOR PAGE TOTALS:          TOTAL,0,0          ENTER"
665 PRINT "-----"
670 PRINT :PRINT "LAST ENTRY: ";D1$;",";C1$;",";A1$;",";W1$;"...COLUMN ";X3
680 PRINT"...NEXT PRINTER LINE # IS...";PL
1000 PRINT :PRINT "DATE,CHECK#,AMOUNT";:INPUT D$,C$,A
1010 IF D$="TOTAL" THEN 1500
1020 PRINT "TO WHOM - PURPOSE.....";:INPUT W$
1030 INPUT "          COLUMN";XX
1040 IF (XX<2) OR (XX>24) THEN PRINT "COLUMN ENTRY ERROR!! ONLY 2-24 VALID": GO
TO 1030
1050 INPUT "CORRECT? (Y/N)";Z$
1060 IF LEFT$(Z$,1)="N" GOTO 600
1070 D1$=D$:C1$=C$:A1$=A:W1$=W$:X3=XX
1080 SP=SP+A
1100 LPRINT D$;TAB(6)C$;TAB(12);:LPRINT USING N$;A;:LPRINT TAB(28)W$;TAB(62)XX:P
L=PL+1:GOSUB 5000
1110 REM * SELECT COLUMN AND ADD TO PREVIOUS TOTAL *
1120 ON XX-1 GOTO 1130,1135,1140,1145,1150,1155,1160,1165,1170,1175,1180,118
5,1190,1195,1200,1205,1210,1215,1220,1225,1230,1235,1240
1130 B=B+A: GOTO 1300
1135 C=C+A: GOTO 1300
1140 D=D+A: GOTO 1300
1145 E=E+A: GOTO 1300
1150 F=F+A: GOTO 1300
1155 G=G+A: GOTO 1300
1160 H=H+A: GOTO 1300
1165 I=I+A: GOTO 1300
1170 J=J+A: GOTO 1300
1175 K=K+A: GOTO 1300
1180 L=L+A: GOTO 1300
1185 M=M+A: GOTO 1300
1190 N=N+A: GOTO 1300
1195 O=O+A: GOTO 1300
1200 P=P+A: GOTO 1300
1205 Q=Q+A: GOTO 1300
1210 R=R+A: GOTO 1300
1215 S=S+A: GOTO 1300
1220 T=T+A: GOTO 1300
1225 U=U+A: GOTO 1300
1230 V=V+A: GOTO 1300
1235 W=W+A: GOTO 1300
1240 X=X+A
1300 GOTO 600
1500 GOSUB 5000:PRINT :PRINT "* PAGE * TOTALS BEING PRINTED...."
1510 LPRINT " ":LPRINT " ":LPRINT "* PAGE TOTALS *": GOTO 1540
1520 GOSUB 5000:PRINT :PRINT "*** MONTH ** TOTALS BEING PRINTED...."
1530 LPRINT " ":LPRINT " ":LPRINT "*** MONTH TOTALS ***"
1540 IF MM=1 GOTO 1800
1550 IF PP=1 GOTO 1680

```



```

1570 LPRINT USING S$;A$(1);SP;A$(13);M
1580 LPRINT USING S$;A$(2);B;A$(14);N
1590 LPRINT USING S$;A$(3);C;A$(15);O
1600 LPRINT USING S$;A$(4);D;A$(16);P
1610 LPRINT USING S$;A$(5);E;A$(17);Q
1620 LPRINT USING S$;A$(6);F;A$(18);R
1630 LPRINT USING S$;A$(7);G;A$(19);S
1640 LPRINT USING S$;A$(8);H;A$(20);T
1650 LPRINT USING S$;A$(9);I;A$(21);U
1660 LPRINT USING S$;A$(10);J;A$(22);V
1670 LPRINT USING S$;A$(11);K;A$(23);W
1680 LPRINT USING S$;A$(12);L;A$(24);X: GOTO 2000
1690 LPRINT USING S$;A$(1);SM;A$(13);M1
1700 LPRINT USING S$;A$(2);B1;A$(14);N1
1710 LPRINT USING S$;A$(3);C1;A$(15);O1
1720 LPRINT USING S$;A$(4);D1;A$(16);P1
1730 LPRINT USING S$;A$(5);E1;A$(17);Q1
1740 LPRINT USING S$;A$(6);F1;A$(18);R1
1750 LPRINT USING S$;A$(7);G1;A$(19);S1
1760 LPRINT USING S$;A$(8);H1;A$(20);T1
1770 LPRINT USING S$;A$(9);I1;A$(21);U1
1780 LPRINT USING S$;A$(10);J1;A$(22);V1
1790 LPRINT USING S$;A$(11);K1;A$(23);W1
1800 LPRINT USING S$;A$(12);L1;A$(24);X1: GOTO 2000
1810 LPRINT USING S$;A$(1);SG;A$(13);M2
1820 LPRINT USING S$;A$(2);B2;A$(14);N2
1830 LPRINT USING S$;A$(3);C2;A$(15);O2
1840 LPRINT USING S$;A$(4);D2;A$(16);P2
1850 LPRINT USING S$;A$(5);E2;A$(17);Q2
1860 LPRINT USING S$;A$(6);F2;A$(18);R2
1870 LPRINT USING S$;A$(7);G2;A$(19);S2
1880 LPRINT USING S$;A$(8);H2;A$(20);T2
1890 LPRINT USING S$;A$(9);I2;A$(21);U2
1900 LPRINT USING S$;A$(10);J2;A$(22);V2
1910 LPRINT USING S$;A$(11);K2;A$(23);W2
1920 LPRINT USING S$;A$(12);L2;A$(24);X2
2000 PRINT:PRINT:PL=PL+15
2010 IF PP=1 GOTO 2110
2020 IF MM=1 GOTO 2200
2030 PRINT
2040 INPUT "DO YOU WANT TO ADD MORE ENTRIES (Y/N)";Y$
2050 IF LEFT$(Y$,1)="Y" THEN GOTO 550
2060 SM=SM+SP:B1=B1+B:C1=C1+C:D1=D1+D:E1=E1+E:F1=F1+F
2065 G1=G1+G:H1=H1+H:I1=I1+I:J1=J1+J:K1=K1+K:L1=L1+L
2070 M1=M1+M:N1=N1+N:O1=O1+O:P1=P1+P:Q1=Q1+Q:R1=R1+R
2075 S1=S1+S:T1=T1+T:U1=U1+U:V1=V1+V:W1=W1+W:X1=X1+X
2080 PRINT:INPUT "ADDITIONAL PAGES THIS MONTH (Y/N)";W$
2090 IF LEFT$(W$,1)="Y" THEN LPRINT CHR$(12):PL=1:GOTO 500
2100 PP=1: GOTO 1520
2110 SG=SG+SM:B2=B2+B1:C2=C2+C1:D2=D2+D1:E2=E2+E1:F2=F2+F1
2115 G2=G2+G1:H2=H2+H1:I2=I2+I1:J2=J2+J1:K2=K2+K1:L2=L2+L1
2120 M2=M2+M1:N2=N2+N1:O2=O2+O1:P2=P2+P1:Q2=Q2+Q1:R2=R2+R1
2125 S2=S2+S1:T2=T2+T1:U2=U2+U1:V2=V2+V1:W2=W2+W1:X2=X2+X1
2130 MM=1
2140 PRINT:INPUT "*** GRAND TOTALS *** (Y/N)";A$
2150 IF LEFT$(A$,1)="Y" GOTO 2170
2160 GOTO 2200
2170 GOSUB 5000:PRINT:PRINT "*** GRAND TOTALS *** BEING PRINTED...."
2180 PRINT:PP=0
2190 LPRINT " ":LPRINT " ":LPRINT "*** GRAND TOTALS ***": GOTO 1540
2200 PRINT:INPUT "ANOTHER MONTH (Y/N)";R$
2210 IF LEFT$(R$,1)="Y" THEN GOTO 500
2220 CLS:PRINT:PRINT:PRINT:PRINT
2230 PRINT "          END OF PROGRAM - SEE YOU AGAIN SOMETIME...."
2240 PRINT:PRINT:PRINT:PRINT
2250 END
3000 REM * ENTER COLUMN HEADINGS (MAX. 12 CHARACTERS EACH) *
3010 FOR Z=1 TO 24:READ A$(Z):NEXT
3020 FOR Z=5 TO 16:LOCATE Z,1:PRINT"COLUMN ";A$(Z-4):NEXT
3030 FOR Z=5 TO 16:LOCATE Z,40:PRINT"COLUMN ";A$(Z+8):NEXT
3040 PRINT:PRINT:INPUT "***** PRESS ENTER TO CONTINUE...";A$
3050 GOTO 400
3060 DATA 1-TOTAL AMOUNT,2-MERCHANDISE,3-BONUSES PAID

```



```

3065 DATA 4-PROMOTION,5-DELIV/POST,6-OFFICE
3070 DATA 7-UTILITIES,8-TAX/INS/LIC,9-PETTY CASH
3075 DATA 10-MARK IV,11-AUTO,12-DRAW
3080 DATA 13-NOT USED,14-NOT USED,15-NOT USED
3085 DATA 16-NOT USED,17-NOT USED,18-NOT USED
3090 DATA 19-NOT USED,20-NOT USED,21-NOT USED
3095 DATA 22-NOT USED,23-NOT USED,24-NOT USED
4000 PRINT :PRINT " ENTER PREVIOUS *** GRAND TOTALS *** : "
4010 PRINT
4020 PRINT A$(1);:INPUT " TOTAL";SG
4025 PRINT A$(2);:INPUT " TOTAL";B2
4030 PRINT A$(3);:INPUT " TOTAL";C2
4035 PRINT A$(4);:INPUT " TOTAL";D2
4040 PRINT A$(5);:INPUT " TOTAL";E2
4045 PRINT A$(6);:INPUT " TOTAL";F2
4050 PRINT A$(7);:INPUT " TOTAL";G2
4055 PRINT A$(8);:INPUT " TOTAL";H2
4060 PRINT A$(9);:INPUT " TOTAL";I2
4065 PRINT A$(10);:INPUT " TOTAL";J2
4070 PRINT A$(11);:INPUT " TOTAL";K2
4075 PRINT A$(12);:INPUT " TOTAL";L2
4080 PRINT A$(13);:INPUT " TOTAL";M2
4085 PRINT A$(14);:INPUT " TOTAL";N2
4090 PRINT A$(15);:INPUT " TOTAL";O2
4095 PRINT A$(16);:INPUT " TOTAL";P2
4100 PRINT A$(17);:INPUT " TOTAL";Q2
4105 PRINT A$(18);:INPUT " TOTAL";R2
4110 PRINT A$(19);:INPUT " TOTAL";S2
4115 PRINT A$(20);:INPUT " TOTAL";T2
4120 PRINT A$(21);:INPUT " TOTAL";U2
4125 PRINT A$(22);:INPUT " TOTAL";V2
4130 PRINT A$(23);:INPUT " TOTAL";W2
4135 PRINT A$(24);:INPUT " TOTAL";X2
4140 MM=1: GOTO 2170
5000 REM * LINE 5050 ADVANCES PRINTER TO NEXT PAGE *
5010 REM * ASSUMES 66 LINES PER PAGE MAXIMUM *
5030 IF PL>52 GOTO 5050
5040 RETURN
5050 LPRINT CHR$(12):PL=1:RETURN
7000 CLS:REM * INSTRUCTIONS WHEN REQUESTED *
7010 PRINT :PRINT " THIS PROGRAM, USED WITH YOUR PRINTER, PRODUCES AN INCOME
"
7020 PRINT "OR EXPENSE LEDGER FOR HOME OR SMALL-BUSINESS USE. YOU MUST"
7030 PRINT "HAVE AN 80-COLUMN PRINTER ON AND READY...."
7040 PRINT :PRINT " THE PROGRAM KEEPS TRACK OF 24 'COLUMNS'. COLUMN 1 IS"
7050 PRINT "ALWAYS THE AMOUNT. COLUMNS 2-24 ARE THE CATEGORIES THIS AMOUNT"
7060 PRINT "MIGHT FALL INTO. COLUMN HEADINGS ARE ASSIGNED IN DATA LINES"
7070 PRINT "3060-3095, WHICH YOU CAN CHANGE FROM THE KEYBOARD BEFORE"
7080 PRINT "ACTUALLY USING THE PROGRAM. HOWEVER, FIRST PRACTICE WITH THE"
7090 PRINT "HEADINGS ALREADY ASSIGNED. (MAX. 12 CHARACTERS PER HEADING!)"
7100 PRINT :INPUT "PRESS ENTER TO CONTINUE....";A$:CLS
7110 PRINT :PRINT "ENTER THE FOLLOWING FOR EACH AMOUNT:
7120 PRINT " DATE (MM/DD).....(COMMA)
7130 PRINT " CHECK # (OR USE - FOR CASH).....(COMMA)
7140 PRINT " AMOUNT (XXXXX.XX).....(ENTER)
7150 PRINT " TO WHOM - PURPOSE.....(ENTER)
7160 PRINT " COLUMN # (2-24 ONLY!).....(ENTER)
7170 PRINT :PRINT "ENTER....TOTAL,0,0.....FOR PAGE TOTALS"
7180 PRINT :INPUT "PRESS ENTER TO CONTINUE....";A$:CLS
7190 PRINT :PRINT " AS YOU CONFIRM EACH BLOCK OF INFORMATION REQUESTED BY TH
E"
7200 PRINT "PROGRAM, A SINGLE LINE CONTAINING THIS INFORMATION IS PRINTED"
7210 PRINT "ON STANDARD 8-1/2 INCH WIDE PAPER. PRINTER LINE NUMBERS ARE"
7220 PRINT "SHOWN FOR EACH ENTRY SO YOU KNOW WHERE YOU ARE ON THE PRINTED"
7230 PRINT "PAGE. WHEN YOU REQUEST TOTALS, EACH COLUMN HEADING WILL BE"
7240 PRINT "PRINTED WITH THE TOTAL FOR EACH COLUMN FOR THAT PAGE. YOU CAN"
7250 PRINT "THEN REQUEST ADDITIONAL PAGES. IF NOT, MONTHLY TOTALS WILL BE"
7260 PRINT "PRINTED. YOU THEN CAN DO ANOTHER MONTH, OR PRINT GRAND TOTALS"
7270 PRINT "OR EXIT THE PROGRAM...."
7280 PRINT :PRINT " THE FORMAT ALLOWS TOTALS TO $99,999,999.99!!"
7290 PRINT :PRINT " ** CRASH RECOVERY: TYPE.... GOTO 600 ....AND ENTER."
7300 PRINT :INPUT "PRESS ENTER TO CONTINUE....";A$: GOTO 300
10000 REM ***** END OF PROGRAM. FILENAME:LEDGER24.SAN *****

```


Machine

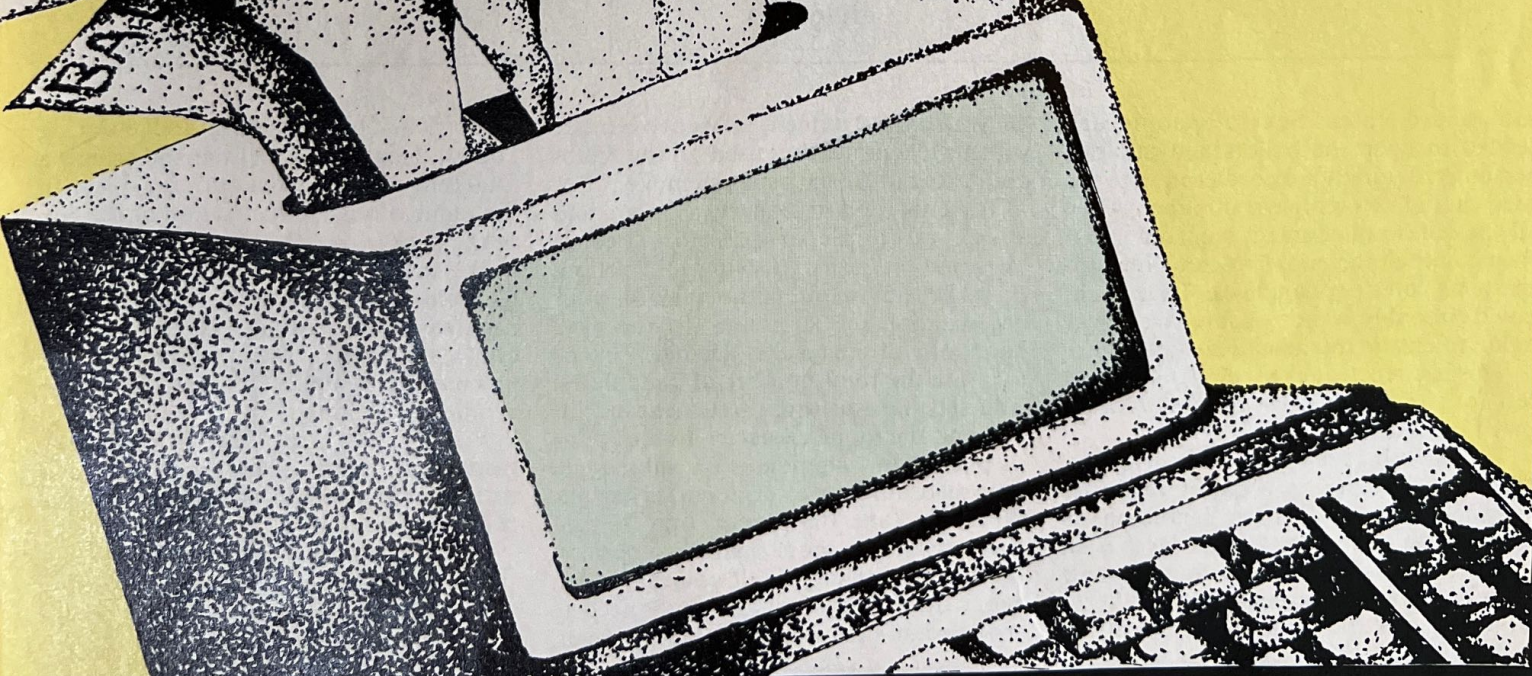
Have you noticed that a lot of home computer owners are active in community organizations, e.g., computer user groups, PTAs, ham radio clubs, country clubs, civic organizations, etc.? Once a year, most of these organizations go through the ritual of electing a new group to lead it — either new officers or a new board. This requires voting, and vote counting is where this program proves to be very valuable.

This year, when the president of the country club I belong to asked me to count the votes, I agreed without giving

Monty Horner, an assistant treasurer for a financial service institution in Louisville, Kentucky, has an MBA from the Wharton School.

By A. "Monty" Horner, Jr.

BALL



it a lot of thought. Later, I started to think about it and remembered previous years when the votes were counted. It only took the 150 members about five minutes to vote, however, it took the counting committee about 45 minutes to count the votes. The members became impatient and tired of waiting for the winners to be announced.

It's a time-consuming process to count

does the rest. Figure 1 is a sample ballot.

Now, on to the balloting! A couple of nights before the voting is to take place, load in *Votemach* and go to Line 560 where each candidate's number and name should be entered as data statements. It is of utmost importance that this be done exactly in the sequence of the ballot. For example, the first name on the sample ballot (Figure 1) is "Monty Horner," and

or perhaps you'll want to buy a voting machine.

Line 200 is where each candidate's vote is recorded by pressing that person's number and the ENTER key. The ballot readers should call out the number of each candidate, not their name, e.g., '2' instead of "Sam Brewer." Continue to do this until all votes are counted, then disengage from the counter section of the program

OWL CREEK COUNTRY CLUB
BOARD OF DIRECTORS BALLOT
DECEMBER 10, 1984

A. Maximum 5 votes per ballot.
B. Maximum 1 vote per candidate.
C. Place an X next to selected candidates' names.

1. ____	Monty Horner	6. ____	Barney Sutton
2. ____	Sam Brewer	7. ____	Kyle Hubbard
3. ____	Barbara Horner	8. ____	Barry Edwards
4. ____	Sid Jones	9. ____	Keith Thomas
5. ____	Mike Jones	10. ____	Ron Walker

Figure 1

and record votes. Several people are needed to open the ballots and another person is required to record each vote for each candidate on a piece of paper. After all the votes are counted, someone must then count all the marks to come up with the total votes per candidate. Even then, you'd probably want to count the marks again to ensure mathematical accuracy.

This is a repetitious process that is best left for the program listed here, which I call *Votemach*.

To take full advantage of this program, you need to develop a ballot that uses numbers to identify each candidate, in addition to their names. This saves a lot of time because the vote-counting people simply say a number and that number is entered into the computer; *Votemach*

the first data statement is Monty Horner with the exact number used on the ballot duplicated in the data statement, i.e., "1."

You only need to load the program and answer a couple of questions before *Votemach* is ready to swing into action. First, Line 50 requests the name of your organization for later use in printing a hard copy of the results. Second, Line 60 asks for the total number of candidates. This sets the dimension statement in Line 130 and the loops necessary to set up the display of the candidates for subsequent vote recording and to print out the results. Note that Line 100 permits only 20 candidates because more than this interferes with the screen display. If your ballot has more than 20 candidates, you'll need to make some major program adjustments,

(lines 260-450) by typing and entering 10000. This moves to Line 460 where a final tally of the results is printed out with the name of your organization at the top of the page.

The purpose of lines 230 and 240 is for correcting a vote number inserted as a negative number (don't ask me how one could do such a thing) or a number entered that is higher than the number of candidates running.

Finally, the program instructs the printer to "beep" four times before it prints the final results to indicate they are ready to print out.

Your organization colleagues will appreciate the time you save them by using *Votemach*. Plus, no one need worry about a mathematical error!

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Clock/Calendar for The A-OK Board	\$ 69
A-OK Board with "The Works"	\$395

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The listing:

```

10 REM*****THIS IS A VOTE COUNTING PROGRAM TO BE USED AT ANNUAL CLUB
20 REM*****VOTE COUNTING MEETINGS. IT WILL TRULY CUT THE TIME
30 REM*****REQUIRED TO FIND OUT WHO WON THE AVAILABLE POSITIONS
40 CLS
50 INPUT"WHAT IS THE NAME OF YOUR ORGANIZATION";O$
60 INPUT"HOW MANY PEOPLE ARE RUNNING IN THE ELECTION";N
70 IF N<=0 THEN 80 ELSE 100
80 PRINT"# OF PEOPLE CAN'T BE ZERO OR LESS THAN ZERO...TRY AGAIN PLEASE."
90 GOTO 60
100 IF N>20 THEN 110 ELSE GOTO 130
110 PRINT"# OF PEOPLE RUNNING CAN'T EXCEED 20...TRY AGAIN PLEASE."
120 GOTO 60
130 DIM A(N)
140 CLS
150 FOR X=1 TO N
160 READ N,N$
170 PRINT N,N$
180 NEXT X
190 LOCATE 22,1
200 INPUT"WHAT IS THE NUMBER OF THE CANDIDATE RECEIVING THIS VOTE (TYPE 10000 TO
END)";V
210 LOCATE 22,78:PRINT"
220 IF V=10000 THEN GOTO 460 ELSE 230
230 IF V<=0 THEN GOTO 190
240 IF V>N THEN GOTO 190
250 ON V GOTO 260,270,280,290,300,310,320,330,340,350,360,370,380,390,400,410,42
0,430,440,450
260 A(1)=A(1)+1:LOCATE 1,40:PRINT A(1):GOTO 190
270 A(2)=A(2)+1:LOCATE 2,40:PRINT A(2):GOTO 190
280 A(3)=A(3)+1:LOCATE 3,40:PRINT A(3):GOTO 190
290 A(4)=A(4)+1:LOCATE 4,40:PRINT A(4):GOTO 190
300 A(5)=A(5)+1:LOCATE 5,40:PRINT A(5):GOTO 190
310 A(6)=A(6)+1:LOCATE 6,40:PRINT A(6):GOTO 190

```

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 - reads, writes and formats 400K DSDD diskettes
 - on quad-density drives:
 - reads, writes, and formats 730K and 800K on ordinary diskettes.

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 - will *not* run Prolok™ disks.

We at A-OK Computers thank you for making **A-OK DOS-4™** the standard DOS for quad-density drives on the Sanyo. Thousands of copies of **DOS-4™** are now in use in the most demanding applications—yours. Potential bugs have been identified and corrected, making **DOS-4** a mature, well seasoned tool. Your constant feedback has resulted in the successive refinement of our documentation. After thorough testing and comparison to would-be competitors, Scottsdale Systems, America's No. 1 seller of Sanyos, selected **DOS-4** as the standard DOS supplied with their Silver Fox™. (HAGEN-DOS™ is A-OK DOS-4). And of course, MidWest Micro Peripherals—one of America's largest sellers of computer equipment has selected **A-OK DOS-4** for their quad-based Sanyo. Because **DOS-4** is now the standard, our 720K and 800K formats are also regarded as the standard. Of the quad-density operating systems, only **A-OK DOS-4** supports the very popular **PrintScreen550**. *Soft Sector* sums it up well in their September 1984 review entitled "A-OK DOS and PrintScreen550—An Unbeatable Combination".

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- **PrintScreen550** is designed for the everyday needs of most users.
- **PrintScreen550** capabilities
 - Prints a screenful of graphics to most popular printers.
 - This prints everything on the screen whether it's graphics or text.
 - User has the option to rotate the image on the paper. This permits Okidata 92s and other printers with less than 640 horizontal dot positions to print out the full screen.
 - Turns your Sanyo into a high-resolution graphics machine.
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- **PrintScreen550** is flexible and easy to use.
 - Interactive mode
 - Works like the "Print Screen" button on the IBM-PC.
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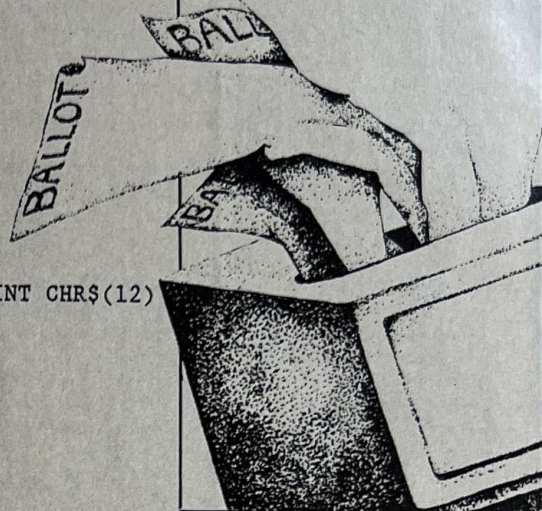
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```

320 A(7)=A(7)+1:LOCATE 7,40:PRINT A(7):GOTO 190
330 A(8)=A(8)+1:LOCATE 8,40:PRINT A(8):GOTO 190
340 A(9)=A(9)+1:LOCATE 9,40:PRINT A(9):GOTO 190
350 A(10)=A(10)+1:LOCATE 10,40:PRINT A(10):GOTO 190
360 A(11)=A(11)+1:LOCATE 11,40:PRINT A(11):GOTO 190
370 A(12)=A(12)+1:LOCATE 12,40:PRINT A(12):GOTO 190
380 A(13)=A(13)+1:LOCATE 13,40:PRINT A(13):GOTO 190
390 A(14)=A(14)+1:LOCATE 14,40:PRINT A(14):GOTO 190
400 A(15)=A(15)+1:LOCATE 15,40:PRINT A(15):GOTO 190
410 A(16)=A(16)+1:LOCATE 16,40:PRINT A(16):GOTO 190
420 A(17)=A(17)+1:LOCATE 17,40:PRINT A(17):GOTO 190
430 A(18)=A(18)+1:LOCATE 18,40:PRINT A(18):GOTO 190
440 A(19)=A(19)+1:LOCATE 19,40:PRINT A(19):GOTO 190
450 A(20)=A(20)+1:LOCATE 20,40:PRINT A(20):GOTO 190
460 CLS
470 LPRINT"
480 LPRINT"
490 LPRINT:LPRINT
500 RESTORE
510 FOR X=1 TO N
520   READ N,N$
530   LPRINT N,N$,A(X)
540 NEXT X
550 LPRINT CHR$(7):LPRINT CHR$(7):LPRINT CHR$(7):LPRINT CHR$(7):LPRINT CHR$(12)
560 DATA 1,MONTY HORNER
570 DATA 2,SAM BREWER
580 DATA 3,BARBARA HORNER
590 DATA 4,SID JONES
600 DATA 5,MIKE JONES
610 DATA 6,BARNEY SUTTON
620 DATA 7,KYLE HUBBARD
630 DATA 8,BARRY EDWARDS
640 DATA 9,KEITH THOMAS
650 DATA 10,RON WALKER

```

VOTING RESULTS FOR:"
";:LPRINT O\$



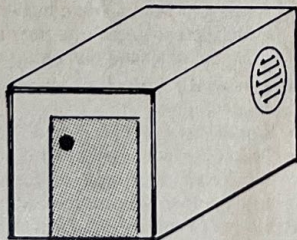
5

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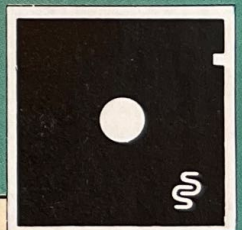
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BIORHYTHMS

By Raymond Richmond

A program just for fun that also utilizes the Sanyo's high resolution color graphics and gives an introduction to plotting in approximation of mathematical functions

When I realized it was within my ability to computerize a biorhythm plotter, I responded mainly to the challenge of figuring out how to design the various sections of the program: Many of these things I had never done before, so everything had to be composed from scratch. And yet, there is something about biorhythms and their uncanny coincidences that this program is worth adding to anyone's collection.

As a professional artist, I pay close

Raymond Richmond is a self-employed artist and is currently a graduate student in counseling psychology at the University of Rochester in New York. He uses his Sanyo 555 primarily for word processing and research, and programs in BASIC for recreation.

attention to small details in my programs. I like to keep the screen display neat and aesthetic; colors are used for dramatic effect and to set a mood. I also choose a difficult solution to a problem over an easy one if the result enhances the program's "charm."

You will notice my artistic approach right at the beginning: lines 70-110 print out a border and a title. This title uses the SYMBOL command with a magnification of two; the second SYMBOL over-prints the first for a shadow effect.

Lines 130-170 take the user's name for later use. Lines 130 and 170 set up a default value for the name variable (NM\$). This is intended for personal use, so you don't have to bother typing in your name every time you check your own biorhythms. Obviously, you have to substitute your own name in Line 130.

One way to clear the screen to make

room for the next section (without destroying the border and title) is found in lines 180-220. Here I've simply printed out a series of blank lines. Another way to do the same thing is with the VIEW command, found in Line 410. Doing it this way you have to remember to reset the view to normal before drawing any more graphics (Line 1010).

In 230-390 the program collects more information; each line is self-explanatory. More personal default values are found in 310. Remember to change these, too.

The section in 420-560 displays all the information obtained and asks if it is correct. I added this section for the convenience of any awkward typists. Lines 490-540 are strictly for amusement — I really enjoy it when a computer seems to act as if it were human.

When the data is correct, the hard part starts. The theory of biorhythms states



that there are three bodily functions contributing to a person's well-being (or not-so-well-being): emotional, intellectual and physical. Each function can be represented graphically by a sine wave, and each has a different period expressed in days — the emotional completes one cycle in 28 days, the physical in 23 days and the intellectual in 33 days. At birth, according to the theory, the curves all start at zero; from then on each goes its merry way based on its own period. To plot a biorhythm, one must compute the current relationship among the three functions.

To do this, one needs to know the total number of days one has been alive. Lines 580-950 calculate that number. Line 950 is a DATA line containing the number of days in each month (999,1 is an end-of-line marker). Lines 620 and 680 search the data to find the birth month. When found, the birth day is subtracted from the

number of days in that month (Line 690). In Line 740 the days of each month are added in turn to the previous total.

A leap year is accounted for in lines 760-790. In lines 800-860 each successive year adds 365 days to the total, with one extra day for every leap year. (YR MOD 4=0 means the year is divisible by four with no remainder.) Finally, in lines 870-940 the days of the current year are added month by month from January to the current month, then the value of the current day is added. At this point we have "DT," the total number of days alive.

The next section sets up the display. Lines 1030 and 1040 draw the coordinate axes; 1050-1070 print out scale divisions. Lines 1080-1280 are an interesting section because they print out the number of each day (by twos) following the day requested. In other words, if you have the 15th of the month plotted, that day is represented by

the Y-axis, and the curves extend about six weeks beyond that day with daily numbers along the X-axis. The only trick here was to get the numbers to continue from one month to the next according to the days in the first month, i.e., the numbering changes if a month has 28, 29, 30 or 31 days.

Lines 1290-1350 print a single line giving the person's name and date requested. In order to format the date properly, all numeric variables had to be changed to string variables; if not, a space would be printed before each number. This footing line is helpful if you send a screen dump to a printer, since the copy then has sufficient documentation to be understood. Lines 1360-1390 print the heading that explains the curves.

Lines 1400-1730 contain the most difficult part of the program. Even though in all naivete I thought I could do it, it

simply isn't possible to say to the computer $Y = \sin X$ — please print 'X' and 'Y' — and get a sine wave on the screen. In fact, if you set up a loop with 'X' from zero to, say, 25, the values returned for 'Y' are decimal values from about .99 to -.99.

Starting with this knowledge, though, it is possible to work out the graph simply by solving one small problem after another. To work in high resolution graphics, the first problem is to find a way to generate a set of points that are all positive integers.

If every 'Y' value is multiplied by 100 and converted to an integer, things would look pretty good, even though some accuracy is sacrificed. The curve would then run from 100 to -100. The screen, however, is only 200 dots high, so I scaled down the curve by dividing it by two. Still, there are negative values, which are all right in the real world, but aren't allowed in the screen world of positive values from zero to 200.

As things stand now, one might imagine the bottom of the screen to be zero with a sine wave running from 50 units above zero to 50 units below zero, off the screen. If 100 were added to every value, the curve would be raised to run from 150 to 50 — except that zero is really at the top of the screen, not the bottom. So, instead of adding 100, subtract each 'Y' value from 100. The curve still runs from 50 to 150, but this time it is in screen coordinates.

The 'X' value simply has to be scaled up a bit; any factor will do, as long as it is consistent. Knowing that each character is eight dots wide, I chose a factor of 16 so numbers could be fit under the date line with a LOCATE command. (Remember that each day space is 16 dots wide.)

So far, each curve is identical: $Y = \sin X$. A periodic curve is defined as $Y = \sin nX$, where the period is defined as two times $P1 / n$. Substituting the period for each curve and solving the equation, I arrived at the values used in 1430, 1550 and 1660.

At this point there are three different curves, all starting at the same point at the far left of the screen. This is their position at birth. As days pass, one can imagine the coordinate axes moving right along the curves, or conversely, one can imagine the curves moving to the left of the screen while the screen remains stationary. Now the problem is to figure out exactly how much to shift them to suit the day being computed.

If DT were an exact multiple of any curve, that curve would have a value of zero as it crossed the 'Y' axis, just as at birth. Therefore, if DT is divided by the period of the curve, the remainder equals the number of days the curve is shifted to the left. Hence the variable ADJ is subtracted from 'X' to get the value of P1. If P1 has a negative value the computer is instructed to ignore it and go to the next 'X'.

All that remains now is to draw the curves on the screen. A line segment cannot be drawn with only one point to determine it, so I selected a point along the 'Y' axis to begin the curve and colored it the same as the axis to make it invisible. This happens only for the first point (lines 1460-1480, 1580-1600 and 1690-1710). After that, each end point becomes a starting point for the next segment and the process continues until the curve is complete.

The closing section is self-explanatory. The user is allowed to choose a printout or another run. If a printout is chosen, information to assist the task then appears, clears itself for the print dump and reappears at the touch of any key to ask for another run. The printer command is specific to the TI 855, switching it temporarily from word processing mode (in which it emulates a daisy wheel printer) to data-processing mode (in which it emulates a dot-matrix printer).

To those who do not have color monitors there are two choices. If your graphics printer dump program is color sensitive, leave in the color commands for the curves and they will be differentiated by the printer. You could also add lines, as the deactivated Line 1500, that print a symbol (in this case a 'P') every 16 horizontal spaces along the curve. Adjust the coordinates to center the symbol, and choose a different symbol for each curve.

The listing:

```

10 REM RAYMOND RICHMOND
20 REM
30 REM TITLE -- BIORHYTHM
40 REM
50 REM
60 CLS
70 REM OPENING SET-UP
80 LINE (5,24)-(634,194),3,B
90 LINE (210,24)-(420,24),0
100 SYMBOL (217,12)," BIO-RHYTHMS ",2,2,1
110 SYMBOL (216,11)," BIO-RHYTHMS ",2,2,5
120 REM FIRST SCREEN
130 RS="RAYMOND RICHMOND": REM CONSTANT FOR PERSONAL USE
140 COLOR 3 : LOCATE 10,37: PRINT "WELCOME!"
150 COLOR 3 : LOCATE 13,24: PRINT "TELL ME PLEASE, WHAT IS YOUR NAME?"
160 COLOR 2 : LOCATE 15,23: INPUT " ",NM$
170 IF NM$="" THEN NM$=RS
180 REM CLEARS INFORMATION
190 COLOR 0
200 FOR I=10 TO 15
210 LOCATE I,20 : PRINT "
220 NEXT I
230 REM GATHERS INFORMATION
240 COLOR 3 : LOCATE 7,25: PRINT "PLEASE ENTER YOUR DATE OF BIRTH"
250 LOCATE 8,23: PRINT "AS REQUESTED BY THE FOLLOWING LINES:"
260 COLOR 6 : LOCATE 9,27: PRINT "(Using only numbers, please)"
270 COLOR 2 : LOCATE 11,33: INPUT "MONTH: ",MO
280 LOCATE 12,33: INPUT "DAY: ",DY
290 LOCATE 13,33: INPUT "YEAR: ",YR
300 REM CONSTANTS FOR PERSONAL USE
12 AUGUST-15 AUGUST 1984

```



```

310 RM=7:RD=4:RY=1950
320 IF MO=0 AND DY=0 AND YR=0 THEN MO=RM:DY=RD:YR=RY
330 REM CONTINUES GATHERING INFORMATION
340 COLOR 3 : LOCATE 16,26: PRINT "PLEASE ENTER THE CURRENT DATE"
350 LOCATE 17,23: PRINT "AS REQUESTED BY THE FOLLOWING LINES:"
360 COLOR 6 : LOCATE 18,27: PRINT "(Using only numbers, please)"
370 COLOR 2 : LOCATE 20,33: INPUT "MONTH: ",MO2
380 LOCATE 21,33: INPUT "DAY: ",DY2
390 LOCATE 22,33: INPUT "YEAR: ",YR2
400 REM CLEARS INFORMATION
410 VIEW (7,26)-(632,192),0
420 REM CHECKS INFORMATION
430 COLOR 3 :LOCATE 10,25:PRINT NMS
440 LOCATE 12,25:PRINT "BIRTHDAY: ";MO;" - ";DY;" - ";YR
450 LOCATE 14,25:PRINT "DATE TO COMPUTE: ";MO2;" - ";DY2;" - ";YR2
460 IF NOT T=0 THEN 490
470 COLOR 2 :LOCATE 17,25
480 INPUT "IS THIS INFORMATION CORRECT? Y/N ",ANS
490 IF NOT T=1 THEN 520
500 COLOR 2 :LOCATE 17,25
510 INPUT "IS EVERYTHING RIGHT NOW? Y/N ",ANS
520 IF NOT T>1 THEN 550
530 COLOR 2 :LOCATE 17,25
540 INPUT "WELL? DO YOU HAVE IT RIGHT YET? Y/N ",ANS
550 IF ANS="y" OR ANS="Y" THEN LOCATE 19,25:PRINT "GOOD...":GOTO 570
560 IF ANS="n" OR ANS="N" THEN VIEW (7,26)-(632,192),0 :T=T+1: GOTO 120
570 REM
580 REM THE FOLLOWING SECTION COMPUTES NUMBER OF DAYS
590 REM FROM BIRTHDAY TO CURRENT DATE
600 REM
610 REM READS MONTH (M) AND NUMBER OF DAYS (D) IN THAT MONTH
620 READ M,D
630 REM IF MONTH READ IS SAME AS BIRTH MONTH THEN PROCEEDS
640 REM TO CALCULATIONS, OTHERWISE READS NEXT MONTH FROM DATA
650 REM
660 REM IF MONTH READ = BIRTH MONTH THEN FINDS DAYS FROM BIRTHDAY
670 REM TO END OF MONTH
680 IF NOT M=MO THEN 620
690 DT=D-DY
700 REM SAME AS LINE 620 BUT REPEATED TO AVOID LINE 680 FOR CONTINUOUS FLOW
710 READ M,D
720 IF M=999 THEN 760
730 REM ADDS DAYS IN MONTH TO TOTAL SO FAR
740 DT=DT+D
750 GOTO 710
760 REM IF YEAR BORN IS LEAP YEAR
770 IF NOT YR MOD 4 = 0 THEN 800
780 IF MO>2 THEN 800
790 DT=DT+1
800 REM CALCULATES DAYS IN SUCCESSIVE YEARS
810 FOR I=(YR+1) TO (YR2-1)
820 DT=DT+365
830 REM TESTS FOR LEAP YEAR
840 IF NOT I MOD 4=0 THEN 860
850 DT=DT+1
860 NEXT I
870 REM CALCULATES DAYS FROM 1 JAN TO CURRENT DATE
880 RESTORE 950
890 READ M,D
900 IF M=MO2 THEN 930
910 DT=DT+D
920 GOTO 890
930 DT=DT+DY2
940 IF YR2 MOD 4=0 AND MO2>2 THEN DT=DT+1
950 DATA 1,31,2,28,3,31,4,30,5,31,6,30,7,31,8,31,9,30,10,31,11,30,12,31,999,9
960 REM
970 REM THIS SECTION PRINTS OUT GRAPHS OF BIORHYTHM CURVES
980 REM
990 REM

```



```

1000 REM   SETS UP DISPLAY
1010 WINDOW (0,0)-(639,199):VIEW (0,0)-(639,199)
1020 CLS
1030 LINE (0,0)-(0,199),5
1040 LINE (0,160)-(639,160),5
1050 FOR I=16 TO 640 STEP 16
1060     SYMBOL (I,157),"|",1,1,5
1070 NEXT I
1080 REM   PLACES NUMBERS BELOW LINE
1090 RESTORE 950
1100 READ M,D
1110 IF NOT M=MO2 THEN 1100
1120     L=2
1130     FOR I=DY2 TO D-1
1140         IF I MOD 2=0 THEN 1170
1150             LOCATE 22,L
1160             PRINT I+1
1170             L=L+2
1180     NEXT I
1190 REM   PRINTS NUMBERS FOR FOLLOWING MONTH
1200 IF M=2 AND YR2 MOD 4=0 THEN L=L+2
1210 READ M,D
1220 FOR I=1 TO D
1230     IF I MOD 2=1 THEN 1270
1240         IF L>76 THEN 1290
1250             LOCATE 22,L
1260             PRINT I
1270             L=L+2
1280 NEXT I
1290 REM   CALCULATES AND PRINTS DATE AT BOTTOM OF CHART
1300 Y$=RIGHT$(STR$(YR2),2)
1310 M$=STR$(MO2)
1320 IF DY2>9 THEN D$=RIGHT$(STR$(DY2),2)
1330 IF DY2<10 THEN D$=RIGHT$(STR$(DY2),1)
1340 LOCATE 24,9
1350 PRINT "BIO-RHYTHM FOR ";NM$;" ON ";M$;"/";D$;"/";Y$;" -";CHR$(26)
1360 REM   PRINTS HEADING
1370 COLOR 4 : LOCATE 5,9 : PRINT "RED = EMOTIONAL"
1380 COLOR 6 : LOCATE 5,31: PRINT "YELLOW = INTELLECT"
1390 COLOR 3 : LOCATE 5,55: PRINT "BLUE = PHYSICAL"
1400 REM   CALCULATES PHYSICAL CURVE (PERIOD = 23)
1410 ADJ=(DT MOD 23) : TIM=0
1420 FOR X=0 TO 75
1430     Y=SIN(.273183*X)
1440     P1=(X-ADJ)*16 : P2=100-INT((Y*100)/2)
1450     IF P1<0 THEN 1510
1460     IF TIM=1 THEN 1490
1470         LINE (0,100)-(P1,P2),5
1480         TIM=1 : GOTO 1510
1490     LINE -(P1,P2),3
1500     ' SYMBOL (P1,P2),"P",1,1
1510 NEXT X
1520 REM   CALCULATES EMOTIONAL CURVE (PERIOD = 28)
1530 ADJ=(DT MOD 28) : TIM=0
1540 FOR X=0 TO 75
1550     Y=SIN(.2244*X)
1560     P1=(X-ADJ)*16 : P2=100-INT((Y*100)/2)
1570     IF P1<0 THEN 1620
1580     IF TIM=1 THEN 1610
1590         LINE (0,100)-(P1,P2),5
1600         TIM=1 : GOTO 1620
1610     LINE -(P1,P2),4
1620 NEXT X
1630 REM   CALCULATES INTELLECTUAL CURVE (PERIOD = 33)
1640 ADJ=(DT MOD 33) : TIM=0
1650 FOR X=0 TO 75
1660     Y=SIN(.1904*X)
1670     P1=(X-ADJ)*16 : P2=100-INT((Y*100)/2)
1680     IF P1<0 THEN 1730

```



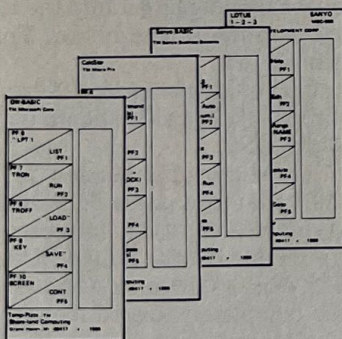
```

1690 IF TIM=1 THEN 1720
1700 LINE (0,100)-(P1,P2),5
1710 TIM=1 : GOTO 1730
1720 LINE -(P1,P2),6
1730 NEXT X
1740 REM CLOSING
1750 LOCATE 1,24:INPUT "DO YOU WANT A PRINT OUT? Y/N ",ANS
1760 LOCATE 1,24:COLOR 0 :PRINT "
1770 IF ANS<>"Y" THEN 1980
1780 LOCATE 1,35:COLOR 0,6:PRINT " WARNING "
1790 LOCATE 2,13:COLOR 4,0
1800 PRINT "DO NOT PROCEED UNLESS Freeze Frame HAS BEEN INSTALLED"
1810 LOCATE 3,29:PRINT "AND THE PRINTER IS ON"
1820 LOCATE 4,26:COLOR 7,0:PRINT "PRESS SPACE BAR TO CONTINUE"
1830 IF INKEY$="" THEN 1830
1840 REM INSTRUCTIONS TO PRINTER -- SWITCH FROM WP TO DP MODE
1850 LPRINT CHR$(27);CHR$(64)
1860 REM CLEARS LINES
1870 FOR X=1 TO 4
1880 COLOR 0 :LOCATE X,13
1890 PRINT "
1900 NEXT X
1910 LOCATE 1,20: COLOR 5 :PRINT "OK. PRESS SPACE BAR TO CLEAR THIS LINE"
1920 LOCATE 2,25:PRINT "PRESS IT AGAIN AFTER PRINTING"
1930 IF INKEY$="" THEN 1930
1940 LOCATE 1,20: COLOR 0 :PRINT "
1950 LOCATE 2,25:PRINT "
1960 LOCATE 1,1,0
1970 IF INKEY$="" THEN 1970
1980 COLOR 3 :LOCATE 1,31:INPUT "RUN AGAIN? Y/N ",ANS
1990 IF ANS="Y" OR ANS="y" THEN 10
2000 IF ANS="N" OR ANS="n" THEN END
9999 END

```



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ASK SANYO

The following questions have been

answered by personnel at Sanyo Business Systems Corp. as a service to SOFT SECTOR readers. Should you have a question, mail it to: 51 Joseph Street, Moonachie, NJ 07074.

Q. Please help an early purchaser of the Sanyo MBC-775 upgrade its capabilities. When I bought it in early 1985, it was capable of more than I ever expected to want. That isn't true anymore. Now I want more memory, multitasking capability and better graphics capabilities.

I've read that memory expansion must use 120 nanosecond chips. Does Sanyo sell any memory expansion boards? Are any of the third party memory expansion boards usable on the 775? Can the 775 be taken beyond 640K?

I assume multitasking will be easily implemented if the memory can be taken to at least 640K. Both Windows and Desqview would seem to provide the degree of multitasking I want. Do you have any comments/suggestions on this (e.g., aspects I haven't thought of)?

Recently, I've begun development activity on a system for university students to accomplish computer-aided apparel design. Consequently, the graphics capabilities of the 775 no longer seem so great. Now I want to upgrade to a resolution of at least 640 by 400 in 16 colors. Can I do this with the 775? Please make suggestions!

Along with more memory, I want increased storage capabilities. Can a hard disk be put inside the 775? I read a letter of yours in Creative Computing (October '85) that mentioned a 775E which has a heavy-duty power supply, a 20 MB or 40 MB hard disk and an external switch to choose between 8 MHz and 4.77 MHz. (Switching to the lower speed allows software written specifically for the IBM PC to run.) Can these enhancements be added to my 775? Will a heavy-duty power supply be needed just if more memory and a graphics board are added to my 775?

How can I change the screen colors to make extended word processing easier on my eyes? I'd like to show green or yellow characters on a black background.

Do you have a list of software and peripherals known to run correctly on the 775?

Wayne L. St. John
Carbondale, IL

A. Sanyo does not sell any memory expansion or multifunction boards for the MBC-775. However, we do recommend a number of boards that function correctly at 8 MHz. We suggest you buy the boards with 0K of RAM and populate it with good quality 120ns RAM. Among the RAM chips we recommend are:

Mitsubishi
NEC
Hitachi
TI
Toshiba
Motorola

The boards we recommend are:

AST Six Pack
STB RIO Plus
Persyst SB384
IDE Associates 384
Profit Systems Add RAM Plus
Everex EV-100
Consolink ConsoCard

As for multitasking software, we have tested MicroSoft's Windows, IBM's Topview and GEM (not really multitasking). All seem to function on the MBC-775/885/675.

Unfortunately, it is impossible to change the type of video display on the MBC-775. Since it is a portable, the video display adapter circuitry is built into the system (it is not a plug-in module). Hard disks can be added if a floppy disk is removed first.

Q. Is there a contract bridge game in software equal to the Random House Tournament Bridge that will run on my Sanyo 555-2 DOS 2.11?

Is there any software that will enable the Sanyo to run IBM programs? What is GW-BASIC?

Philip Morton
Darby, MT

Q. Is there any way I can make my Sanyo 555-2 with 256K more IBM com-

patible? I have heard of Sanyo's optional IBM-compatible video board and would like to know how this works, whether it is easy to install and from whence it can be obtained and at what price. Just how IBM compatible would my Sanyo then be?

Rev. Michael G. Cole
Chapico, MD

A. The MBC-555 series will run certain programs that run on the IBM PC. In general, programs that are MS-DOS compatible will run on the MBC-555. Also, programs that use the software BIOS interrupts have a fair chance of running on the Sanyo. Those programs which directly access the hardware features of the IBM will not run on the MBC-555 since the Sanyo's hardware is completely different from that of the IBM.

With the video board installed, programs that directly access the video RAM of the PC will sometimes run on the MBC-555 series. But be careful! Many of these programs also directly interrogate other hardware features such as the keyboard or the speaker. These programs will not work even if the video board is installed.

The video board is fairly easy to install, but some of the computers need to have the power supply altered. This is done by taking out the power supply and changing two resistors. Aside from this, you install the video board by plugging it into the 62-pin connector on the motherboard. This is a fairly simple job.

The price of the video board is \$199 and the price of the VB512 (a video board with 256K RAM) is \$299.

GW-BASIC is Microsoft's version of a graphics BASIC that runs under MS-DOS. In the IBM, most of the BASIC interpreter is located in ROM. On the Sanyo MBC-775/885/675, the BASIC is RAM-based and must be completely loaded from the disk. Sanyo also provides a version of GW-BASIC for the MBC-555 when you purchase the video board. This helps to improve the compatibility of the Sanyo MBC-555.

I know of no versions of contract bridge that will run on the MBC-555.

Q. I have seen, with great interest, the advertisements of vendors offering hard disk kits and RAM expansion well beyond the 256K originally intended by Sanyo. Without reliable information on these items I am skeptical of these offerings, particularly because MS-DOS does

not seem to be able to recognize more than 256K RAM and Sanyo doesn't seem to have designed the MBC-555 series with hard disks in mind.

Do you know of any patches to WordStar that will warn of a full directory before you save (or open) another file? I had to retype this letter from scratch because when I tried to save it, a directory full message flashed at the bottom of the screen, then disappeared instantaneously, along with the screenful of writing and my file. I get a chance to make room by erasing something else when the disk is full; can't I have the same opportunity when the directory is full?

Jorge E. Amador
Forest Grove, PA

A. Systems Peripherals Consultants has developed a hard disk controller with expansion memory. We have found SPC to be a reliable company, but they alone warranty their equipment and Sanyo Business Systems cannot be responsible for any malfunctions due to their product. There may be other companies that also manufacture such add-on equipment, but SPC is the only one that has sent us such a board for evaluation. You may contact Bob Richards at SPC, (619) 693-8611.

There is no known WordStar patch that will warn you of a full directory before you open a file.

Q. I am considering the purchase of a Sanyo computer. Before doing so I need to know the answers to a couple of questions.

Do you know of any APL versions which run on the Sanyo? (IBM, I.P. Sharp, STSC). STSC's APL Plus should run on most computers using DOS 2.0 or higher. STSC, for example, furnishes a replacement character generator chip so that APL characters will appear on the screen. Would this work on a Sanyo?

Are there provisions in the Sanyo for the addition of an arithmetic chip such as the 8087 (which can be added to the IBM PC) to speed calculation?

Forrest W. Gibson
San Pedro, CA

A. The STSC version of APL seemed to work on the Sanyo MBC-775, but there was an undetermined problem with some of the screen characters. This problem seemed to be fixed when a graphics table

was loaded before the program was run. We have not tested the STSC version fully, so we cannot guarantee that all the features will work.

One very nice, and low cost, version of APL that seems to run correctly on all Sanyo computers is PortAPL by Portable Software. They even have a version that runs on the MBC-555 (the IBM version is needed for the MBC-775/885/675). The

number of Portable Software is (617) 547-2918 and the contact person is Richard Smith.

All of Sanyo's 8088-based computers have a socket for the 8087. You must use an 8087-2 for the MBC-775 and 885 since they run at 8 MHz. You must also have software that takes advantage of the 8087. Do not expect an improvement in speed just by putting the NDP in the computer.



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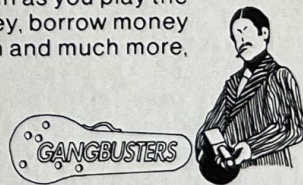
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145 FOR D=1 TO 3000: 'MEANINGLESS COUNTING DELAY
150 NEXT D: 'GIVES USER TIME TO READ THE SCREEN
155 LOCATE 8,4,2: 'PARAGRAPH TO BEGIN AT ROW 8, COLUMN 4, IN COLOR 2
160 PRINT
165 PRINT " This program demonstrates and documents various graphics (video)
170 PRINT
175 PRINT " capabilities of the MBC-555 invoked by use of the COLOR"
    " instruction."
180 PRINT
185 PRINT " That function is not adequately documented in either the Basic or"
    " the"
190 PRINT
195 PRINT " Operating System manual issued by Sanyo, so this program has been"
    " devised"
200 PRINT
205 PRINT " to supplement those manuals. Look in the index, in each manual,"
    " for the"
210 PRINT
215 PRINT " entries COLOR and BRIGHTNESS and BLINKING and INVERSE VIDEO. Those"
220 PRINT
225 PRINT " topics are illustrated in the following program, named SANCOLOR.BAS"
230 PRINT
235 PRINT
240 PRINT
245 PRINT " To pause the LISTing of the program, strike the space bar;"
250 PRINT " to resume the LISTing, strike the space bar again.";
255 LOCATE 23,1,0:'MOVES CURSOR ASIDE AND WRITES IT BLACK ON BLACK (INVISIBLE)
260 IF=INKEY$:IF IF=CHR$(32) THEN 265 ELSE 260:'PAUSE UNTIL SPACE BAR STRUCK
265 CLS:'CLEARS THE SCREEN (ERASES THE PREVIOUS DISPLAY)
270 COLOR 2,0:'RESTORES BRIGHTNESS 2 WRITTEN ON BLACK FIELD IN NEXT DISPLAY
275 PRINT "Brightness variations: three levels of brightness can be imparted"
280 PRINT " to any screen display, by use of the COLOR function.
285 PRINT
290 PRINT " 1. Lowest level of brightness (Color Level 1)
295 PRINT
300 PRINT " Use the function COLOR 1,0 to display characters as a faint"
305 PRINT " trace (COLOR LEVEL 1) on a background set to COLOR LEVEL 0"
310 PRINT
315 COLOR 1,0:PRINT " This is COLOR LEVEL 1 on COLOR LEVEL 0
320 COLOR 2,0:'RETURNS TO COLOR 2 FROM COLOR 1, FOR NEXT LINE TO BE DISPLAYED
325 PRINT
330 PRINT " 2. Medium level of brightness (COLOR LEVEL 2)
335 PRINT
340 PRINT " Use the function COLOR 2,0 to display characters in the normal
345 PRINT " level of brightness (foreground COLOR LEVEL 2) on a dark field
350 PRINT " (background COLOR LEVEL 0), as in the present line.
355 PRINT
360 PRINT " 3. Highest level of brightness (COLOR LEVEL 3)
365 PRINT
370 PRINT " Use the function COLOR 3,0 to make the characters displayed as
375 PRINT " bright as possible (foreground intensity set to COLOR LEVEL 3)
380 PRINT " with the background or field set to COLOR LEVEL 0, as here:
385 PRINT
390 COLOR 3,0:'NEXT LINE WILL BE PRINTED COLOR LEVEL 3 ON LEVEL 0 FIELD
395 PRINT " This is COLOR LEVEL 3 on COLOR LEVEL 0
400 LOCATE 25,7,0:'BLACKS OUT THE CURSOR, SO IT WON'T DISTRACT THE VIEWER
410 IF=INKEY$:IF IF=CHR$(32) THEN 415 ELSE 410:'PAUSE UNTIL SPACE BAR IS STRUCK
415 CLS:'ERASES PREVIOUS SCREEN FOR NEXT DISPLAY
425 LINE (50, 8)-(550, 33),1,BF:'LINES 425 to 445 DRAW FIVE BOXES (B)
430 LINE (50, 33)-(550, 55),4,BF:'EACH STRIP FILLED (F) WITH A DIFFERENT
435 LINE (50, 55)-(550, 80),2,BF:'GREEN PAINT:
440 LINE (50, 80)-(550,104),5,BF:' BRIGHTNESS 1,4,2,5,3,
445 LINE (50,104)-(550,128),3,BF:'IN THAT ORDER, DOWN THE SCREEN
450 '
455 LOCATE 18,7,2:PRINT"The Sanyo monochrome palette can be increased to five "
    "colors,"
460 LOCATE 19,7,2:PRINT"seen here, if SWITCH #1, on DIP SWITCH DTS-4 on the "
    "MBC-555 "
465 LOCATE 20,7,2:PRINT"circuit board, is flipped to the ON position and left "
    "there."
470 LOCATE 21,7,2:PRINT"Switch DTS-4 is located between the keyboard cable "
    "socket and "
475 LOCATE 22,7,2:PRINT"the monitor cable socket, inside the cabinet. "
    "Codes 1,2,3 are "

```



```

480 LOCATE 23,7,2:PRINT"for the three most used brightness levels; codes"
      " 4,5 specify "
485 LOCATE 24,7,2:PRINT"intermediate levels of brightness; codes 6,7 add "
      "blinking."
490 'NEXT, EACH LABEL IS POSITIONED, THEN WRITTEN BLACK ON A BRIGHT FIELD
495 LOCATE 3,10,0:PRINT"CODE 1, LEVEL 1.0
500 LOCATE 6,10,0:PRINT"CODE 4, LEVEL 1.5
505 LOCATE 9,10,0:PRINT"CODE 2, LEVEL 2.0
510 LOCATE 12,10,0:PRINT"CODE 5, LEVEL 2.5
515 LOCATE 15,10,0:PRINT"CODE 3, LEVEL 3.0
520 LOCATE 23,1,0:'BLACKS OUT THE DISTRACTING CURSOR
525 I$=INKEY$:IF I$=CHR$(32) THEN 530 ELSE 525:'PAUSE, TO READ SCREEN
530 CLS
535 COLOR 2,0
540 PRINT "Blinking: Any part of the screen can be made to blink.
545 PRINT
550 PRINT
555 PRINT " 1. Use COLOR 6,0 to cause blinking of characters displayed
560 PRINT "      in normal brightness (COLOR LEVEL 2), on a black field:
565 PRINT
570 COLOR 6,0:'SWITCHES ON BLINKING FOR THE LINE 575 DISPLAY
575 PRINT "      COLOR 6,0 causes blinking at LEVEL 3.0 brightness"
580 COLOR 2,0:'BLINKING SWITCHED OFF BY RETURN TO NORMAL COLORS 2,0
585 PRINT
590 PRINT "      Note: Brightness changes from LEVEL 3.0 to LEVEL 1.5
595 PRINT
600 PRINT " 2. Use COLOR 7,0 to cause blinking of characters displayed
605 PRINT "      at the highest level of brightness on a black field:
610 PRINT
615 COLOR 7,0:'SWITCHES ON BLINKING FOR THE LINE 620 DISPLAY
620 PRINT "      COLOR 7,0 causes blinking at LEVEL 3.5 brightness"
625 COLOR 2,0:'BLINKING SWITCHED OFF BY RETURN TO NORMAL COLORS 2,0
630 PRINT
635 PRINT
640 LOCATE 25,1,0:'HIDES THE CURSOR
645 LINE (280,153)-(320,172),,B:'DRAWS AN EMPTY BOX
650 LOCATE 21,37:COLOR 6,0:PRINT"***":'PUTS BLINKING STARS IN BOX
655 FOR D=1 TO 500:NEXT D:'DELAY HOLDS BLINKING STARS ON DISPLAY
660 COLOR 2,0:LOCATE 21,37,0:PRINT"***":'BLACKS OUT STARS IN BOX
665 FOR C=1 TO 20:C=C+1:'BEGINS COUNTDOWN LOOP, CLOSED AT LINE 820
670 LINE (280,153)-(320,172),,B:'SMALL BOX TO HOLD COUNTDOWN NUMBERS
675 LOCATE 21,37,3:'LOCATION OF COUNTDOWN NUMBERS INSIDE SMALL BOX
680 COLOR 3,0:'BRIGHTNESS 3 FOR COUNTDOWN NUMBERS DISPLAYED IN BOX
685 PRINT 21-C:'COUNTDOWN NUMBER DISPLAYED AFTER EACH FLIP-FLOP
690 LOCATE 25,1,0:'BLACKS OUT (HIDES) CURSOR
695 LINE (400,150)-(500,190),0,BF:'BLACKS OUT FLAG, SCREEN RIGHT
700 LINE (100,150)-(200,190),2,BF:'DRAWS BIG BOX, SCREEN LEFT
705 LINE (120,160)-(140,180),1,BF:'DRAWS SMALL BOX, SCREEN LEFT
710 FOR N = 1 TO 200 : 'DELAY HOLDS BOX DISPLAY, SCREEN LEFT
715 D = N*N : 'MEANINGLESS COMPUTATION, TIME DELAY
720 NEXT N : 'END OF TIME DELAY LOOP
725 LOCATE 25,1,0 : 'BLACKS OUT (HIDES) CURSOR
730 LOCATE 21,37,6:COLOR 3,0:PRINT 20-C:COLOR 2,0
735 LOCATE 25,1,0 : 'BLACKS OUT (HIDES) CURSOR
740 LINE (100,150)-(200,190),0,BF:'BLACKS OUT BOX, SCREEN LEFT
745 LINE (400,150)-(450,170),3,BF:'DRAWS FLAG BOX, SCREEN RIGHT
750 LINE (450,150)-(500,170),1,BF:' " " " " "
755 LINE (400,170)-(450,190),1,BF:' " " " " "
760 LINE (450,170)-(500,190),3,BF:' " " " " "
765 FOR N = 1 TO 200 : 'DELAY HOLDS BOX DISPLAY, SCREEN RIGHT
770 D = N*N : 'MEANINGLESS COMPUTATION, TIME DELAY
775 NEXT N : 'END OF TIME DELAY LOOP
780 NEXT C:IF (20-C)>0 THEN 675 ELSE 785:'CONTINUE FLIP-FLOP UNTIL COUNT=ZERO
785 LINE (400,150)-(500,190),0,BF:'BLACK OUT (ERASE) FLAG BOX, SCREEN RIGHT
790 LOCATE 20,1,0:PRINT STRING$(75, CHR$(32)):'ERASE ENTIRE LINE
795 LINE (400,150)-(500,190),0,BF:'BLACKS OUT (ERASES) BOX, SCREEN RIGHT
800 LOCATE 22,1,0:PRINT STRING$(75, CHR$(32)):'ERASE ENTIRE LINE
805 LOCATE 21,20:PRINT"Press space bar, to continue"
810 LINE (140,152)-(390,175),,B:'DRAW BOX AROUND LINE 805 MESSAGE
815 LINE (130,145)-(400,182),,B:'DRAW BOX AROUND BOX FOR DOUBLE BOX
820 LOCATE 25,1,0:'HIDE THE CURSOR
825 I$=INKEY$:IF I$=CHR$(32) THEN 830 ELSE 825:'PAUSE, TO READ SCREEN
830 COLOR 0,2:'NEXT DISPLAY WILL BE BLACK WRITTEN ON BRIGHT FIELD

```



```

835 GLS: 'ERASES PREVIOUS SCREEN DISPLAY
840 PRINT
845 PRINT "                               Inverse Video
850 PRINT
855 PRINT "      Instead of the usual display of illuminated (white) characters"
      " on a black "
860 PRINT
865 PRINT " field, it is possible to do the opposite - to display black (dark)"
      " characters"
870 PRINT
875 PRINT " on an illuminated (bright) field, called the background."
880 PRINT
885 PRINT "      To achieve that effect, the entire screen can be illuminated"
      " by use of"
890 PRINT
895 PRINT " the COLOR function, as shown on the present screen.  Windows can"
      " be placed"
900 PRINT
905 PRINT " anywhere, by use of the LOCATE and LINE functions, as below.
910 PRINT
915 LINE ( 50,120)-(195,170),1,BF: 'PAINTS BOX WITH COLOR 1
920 LINE (205,120)-(395,170),2,BF: 'PAINTS BOX WITH COLOR 2
925 LINE (405,120)-(550,170),3,BF: 'PAINTS BOX WITH COLOR 3
930 COLOR 2,1          : 'NEXT, WILL WRITE COLOR 2 ON COLOR 1 FIELD
935 LOCATE 18,12,2:PRINT "COLOR 2
940 LOCATE 19,12,2:PRINT "ON
945 LOCATE 20,12,2:PRINT "COLOR 1
950 COLOR 3,2          : 'NEXT, WILL WRITE COLOR 3 ON COLOR 2 FIELD
955 LOCATE 18,33,3:PRINT "COLOR 3
960 LOCATE 19,33,3:PRINT "ON
965 LOCATE 20,33,3:PRINT "COLOR 2
970 COLOR 1,3          : 'NEXT, WILL WRITE COLOR 1 ON COLOR 3 FIELD
975 LOCATE 18,57,1:PRINT "COLOR 1
980 LOCATE 19,57,1:PRINT "ON
985 LOCATE 20,57,1:PRINT "COLOR 3

```

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```

990 LOCATE 25, 1,2:'HIDE CURSOR, COLOR 2, ON COLOR 2 FIELD
995 LOCATE 24,23,0:PRINT "To continue, hit the space bar
1000 IS=INKEY$:IF IS=CHR$(32) THEN 1005 ELSE 1000:'PAUSE, TO READ SCREEN
1005 CLS
1010 LOCATE 2,8,0:'HIDE THE CURSOR (BLACK IT OUT, OUT OF THE WAY)
1015 PRINT "You may type something on this blank page and, if necessary,"
1020 PRINT "      correct it with the backspace key.  When finished, strike"
1025 PRINT "      the ENTER key.
1030 LINE INPUT"      Start typing:"; WORDS$
1035 PRINT
1040 LOCATE 22,20,0:PRINT"Summary follows (Press space bar)
1045 PRINT
1050 IS=INKEY$:IF IS=CHR$(32) THEN 1055 ELSE 1050
1055 CLS
1060 LOCATE 2,18,0
1065 PRINT "SUMMARY OF BRIGHTNESS AND BLINKING CODES
1070 LOCATE 4,20,0:PRINT "(FOR EITHER FOREGROUND OR BACKGROUND)
1075 LOCATE 6,16,0
1080 PRINT "CONTROL      BRIGHTNESS      BLINKING      BLINK
1085 LOCATE 7,16,0
1090 PRINT " CODE          LEVEL              RANGE
1095 LOCATE 10,16,0
1100 PRINT "      0              0              NO              -
1105 LOCATE 12,16,0
1110 PRINT "      1              1.0            NO              -
1115 LOCATE 14,16,0
1120 PRINT "      4              1.5            NO              -
1125 LOCATE 16,16,0
1130 PRINT "      2              2.0            NO              -
1135 LOCATE 18,16,0
1140 PRINT "      5              2.5            NO              -
1145 LOCATE 20,16,0
1150 PRINT "      3              3.0            NO              -
1155 LOCATE 22,16,0
1160 PRINT "      6              3.0            YES             3.0 to 1.5
1165 LOCATE 24,16,0
1170 PRINT "      7              3.5            YES             3.5 to 2.5
1175 LINE (100, 5)-(515, 5) : 'DRAW LINE TO DEFINE TABLE
1180 LINE (100, 35)-(515, 35) : ' " " " " "
1185 LINE (100, 58)-(515, 58) : ' " " " " "
1190 LINE (100, 5)-(100,197) : ' " " " " "
1195 LINE (515, 5)-(515,197) : ' " " " " "
1200 LINE (100, 35)-(100,197) : ' " " " " "
1205 LINE (400, 35)-(400,197) : ' " " " " "
1210 LINE (100,197)-(515,197) : ' " " " " "
1215 LINE (300, 35)-(300,197) : ' " " " " "
1220 LOCATE 25,1,0
1225 IS=INKEY$:IF IS=CHR$(32) THEN 1230 ELSE 1225
1230 COLOR 2,0:'RESTORES BLACK BACKGROUND FOR NEXT DISPLAY
1235 CLS      : 'CLEARS SCREEN FOR NEXT DISPLAY
1240 COLOR 2,0:'RESTORES BLACK BACKGROUND FOR NEXT DISPLAY
1245 COLOR 0,3:'WILL NEXT PRINT BLACK ON COLOR 3 FIELD
1250 LOCATE 2,15,3:PRINT STRING$(52, 32)
1255 LOCATE 3,15,0:PRINT "      To repeat the program, hit the space bar
1260 LOCATE 4,15,3:PRINT STRING$(52, 32):'PRINT 52 SPACES PAINTED COLOR 3
1265 LOCATE 7,15,3:PRINT STRING$(52, 32)
1270 LOCATE 8,15,0:PRINT "      To LIST the program, depress the L key
1275 LOCATE 9,15,3:PRINT STRING$(52, 32)
1280 LOCATE 12,15,3:PRINT STRING$(52, 32)
1285 LOCATE 13,15,0:PRINT "      To exit the program, strike the BREAK key
1290 LOCATE 14,15,3:PRINT STRING$(52, 32)
1295 LOCATE 18,50,2:PRINT STRING$(27,233):'GREEK LETTER AS ORNAMENTS
1300 LOCATE 19,50,2:PRINT STRING$(27, 32)
1305 LOCATE 21,50,2:PRINT STRING$(27, 32)
1310 LOCATE 22,50,2:PRINT STRING$(27,233):'PRINT 27 GREEK ORNAMENTS
1315 LOCATE 20,59,2:PRINT "Sayonara"
1320 LOCATE 20,50,2:PRINT STRING$( 9, 32)
1325 LOCATE 20,67,2:PRINT STRING$(10, 32)
1330 COLOR 2,0
1335 LOCATE 23,1,0
1340 IS=INKEY$:IF IS=CHR$(32) THEN 100 ELSE IF IS=CHR$(76) THEN 1345 ELSE 1340
1345 LIST 100-      : 'RETURN TO LINE 100, TO LIST THIS PROGRAM ON THE SCREEN
1350 END
1355 ' This is the END of the SANCOLOR.BAS Demonstration Program

```


Of all the features of the Delphi MS-DOS SIG, it's the data-

base that can prove the most valuable to the members. This is where you can share the programs you write with other users, and where you can download programs yourself — everything from short utilities to some of the finest full-featured terminal programs available anywhere.

But the MS-DOS SIG database is a collection of programs uploaded and submitted by the members. In other words, it takes a lot of member participation to build a really good collection. The more all the members are willing to participate, the better the database collection will become.

For this reason, let's look at the process of uploading a file to your Workspace in the SIG, the first step in sharing programs with other Sanyo users.

The first thing you have to do is get the program transferred, over the telephone line, to the Delphi host. Now, a high-speed data transfer can be an intimidating, mind-boggling thing if you try to put too much thought into it. But in practice, it couldn't be more simple.

Any program uploading to the SIG must be done in the area known as your Workspace. At the MS-DOS SIG prompt, type DA to enter into the database and then select one of the topics by typing in the first few letters. (Remember that it really doesn't matter which topic is selected; you can still submit a program to any of the other topics.) From here you can enter the Workspace by typing WD.

Inside the Workspace, you will find that it is nothing more than a file storage area, just like a hard or floppy disk. Many of the MS-DOS file commands you're already familiar with function just the same as they do on your computer. You can rename a file with REN, copy a file with COPY, get a directory with DIR, and the DOS question mark (?) and asterisk (*) wild cards function the same, too.

There are actually more ways than one to upload a file, depending on what type of file it is, what protocols your own terminal program supports, and even personal preference. If you want to upload a pure ASCII text file or BASIC program saved in ASCII, you can upload it as an ASCII transfer. Just type UP filename, then respond with "no" when the system asks whether you want a line feed sent after every line. Begin the ASCII transfer on your terminal and you will see all of the characters start flowing across the screen as if you were typing them in yourself. When the file has finished, send a CONTROL-Z to close the file.

Now the ASCII transfer is fine in many cases, particularly for short messages, but there is no error-checking going on during the transfer. If your telephone connection is noisy, you can wind up with characters in the receiving file that shouldn't be there. So you can see, for something critical like a BASIC program, this is not a very reliable method of transfer even though it is ASCII.

Enter the error-checking protocols, Xmodem and Kermit (not the only two, by any means, but two of the most popular and the only ones currently supported by Delphi). When transferring binary files, it is *necessary* to use one of these protocols, but you should also go this route when transferring ASCII files if an error-free transfer is imperative. Under these protocols, your computer quickly sends

a block of data, then communicates with the host computer to see if the block received is exactly like the one sent. If not, it resends the same block again and keeps trying until it gets it right or the transfer is aborted.

To begin an Xmodem upload, enter your Workspace and type XUP filename. When asked whether it is a text or binary file, answer appropriately. In a couple of seconds, the system will tell you "OK, send." From here, it's up to you to begin the transfer on your computer. When it has begun properly, your terminal program will probably display information about each block as it is transferred so you know everything is moving along successfully.

For a Kermit upload to your Workspace, type KUP. Notice that it is not necessary to specify the filename. You can if you want to, but Kermit transfers the proper filename, along with other information, in the file header. Here, too, the system asks whether you will be sending only text files; answer yes or no and begin the transfer on your machine.

Now, you may have noticed the word "only" above and wondered about it. This is because, with Kermit, you can do "batch" transfers as well as single files. For instance, you can upload *.BAS and transfer every BASIC program that happens to be on the disk in your default drive at once. The only catch to this is that you cannot mix ASCII and binary files in the same batch transfer.

OK, so the command to begin an ASCII transfer is UP, an Xmodem transfer is XUP and a Kermit transfer is KUP. Simple enough, right? Just enter the MS-DOS SIG, go into your Workspace and upload a short test file using each of the protocols. Next month we'll look at some of the things you can do with a file after it has been uploaded.

— Kevin Nickols
MS-DOS SIG Manager

One Liner

Outline Gives Eye-Catching Results

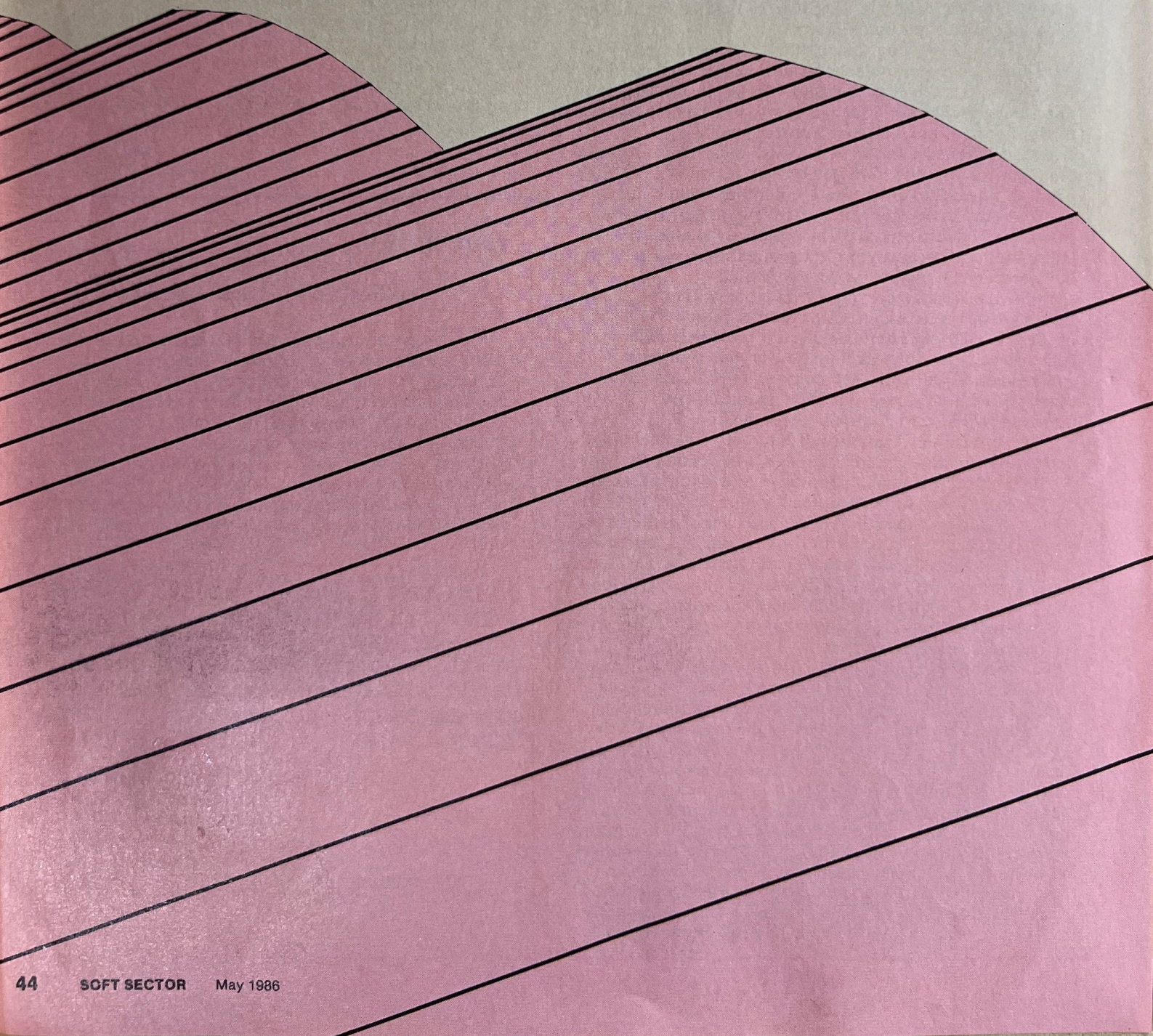
This program, using the SYMBOL command in Sanyo BASIC, demonstrates a technique that you can use to advantage in your own programs. When you run this one-liner, enter some text (or graphics characters, if you like) up to 26 characters in length. Then enter a foreground and border color (or just hit ENTER). The program will print your text in nine slightly different positions, and overprint in the foreground color, providing outlined lettering. (This is very similar to the outlining provided by character generators used in TV studios. — Editor)

```
1 CLS:INPUT(26)"Text ";A$:INPUT "Color (
  0-7) ";T:INPUT"Border Color (0-7) ";O:LO
  CATE 1,1,0:T=T-(T AND T=0):O=O+(7 AND T=
  0):CLS:C=319-24*LEN(A$)/2:FOR X=0 TO 2:F
  OR Y=0 TO 2:SYMBOL (X+C,Y+87),A$,3,3,O:N
  EXT:NEXT:SYMBOL (1+C,88),A$,3,3,T:WHILE
  INKEY$="" :WEND
```

Matthew Walker
Christchurch, New Zealand

(For this winning one-liner contest entry, the author has been sent a copy of the May edition of SOFT SECTOR ON DISK).

Putting Your On Paper



Graphics

By James K. Hardy

This short BASIC subroutine gives you the ability to produce screen dumps on an Epson FX-80 dot-matrix printer

One impressive feature of the Sanyo 550 series is the inclusion of high resolution graphics in the base unit. With such BASIC commands as LINE, CIRCLE, PSET and PAINT, it is easy to create elaborate graphics displays in eight colors. One limitation, though, is the lack of a PRTSCN feature comparable to the IBM, which would allow for the production of a hard copy of your display. This article describes a short BASIC subroutine that allows for the production of screen dumps to an Epson FX-80 dot-matrix printer.

The screen dump actually consists of two separate routines. At the start of your program (prior to producing the display) lines 10 and 20 serve to align the screen display with video RAM and select the color that is to be dumped. This accounts for the problem of hardware scrolling, as Location 0 may not always be at the upper left-hand corner of your display. Line 20 allows you to determine which color is read for the dump. DEF SEG = &HC00 should be used for green, &HF000 for red and &HF400 for blue. Users with monochrome monitors should use green. Also, if the color used is a combination that contains the color selected, it is also printed (for example, white works with any color whereas yellow works with green or red).

The second routine is the actual screen dump. In its current form it is configured to operate with an Epson FX-80 printer, but can easily be adapted to any dot-matrix printer capable of bit imaging. This routine should be called once your graphics display is ready. The LPRINT statement in Line 1010 serves to instruct the FX-80 to enter graphics mode with a density of 960 dots per line, whereas Line 1030 tells the printer to use single density graphics and to expect up to 400 bytes of graphics data per line. The bulk of the subroutine consists of reading individual bytes of video RAM and printing it on a per-line basis.

The loops employed to read video RAM may appear somewhat odd but are used to account for the order in which the information is stored. The resulting image is rotated 90 degrees. To improve the look of the printout, trial and error with several graphics modes proved that single density at 960 dots per inch gave the best display if each byte read was printed twice (the reason for Line 1070). Figures 1 and 2 are typical printouts using the routine. It should also be noted that as the program is written in BASIC and over 16,000 data points must be read, the print time is somewhat slow, requiring about three minutes to print an entire screen.

Jim Hardy, a professor of chemistry at the University of Akron, specializes in the field of environmental analytical chemistry. He has published several programs dealing with chemical education and computer interfacing. Jim may be contacted at the University of Akron, Department of Chemistry, Akron, OH 44325; phone (216) 375-6061.

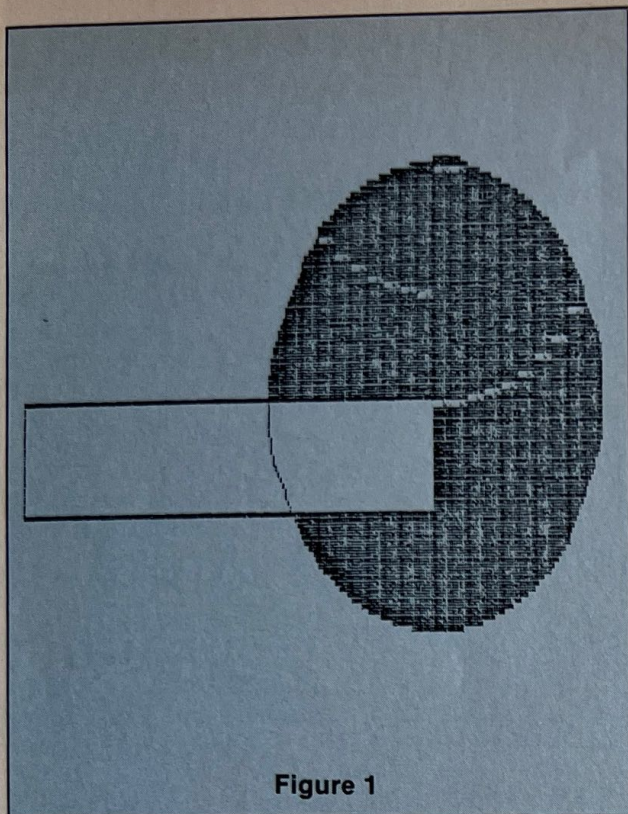


Figure 1

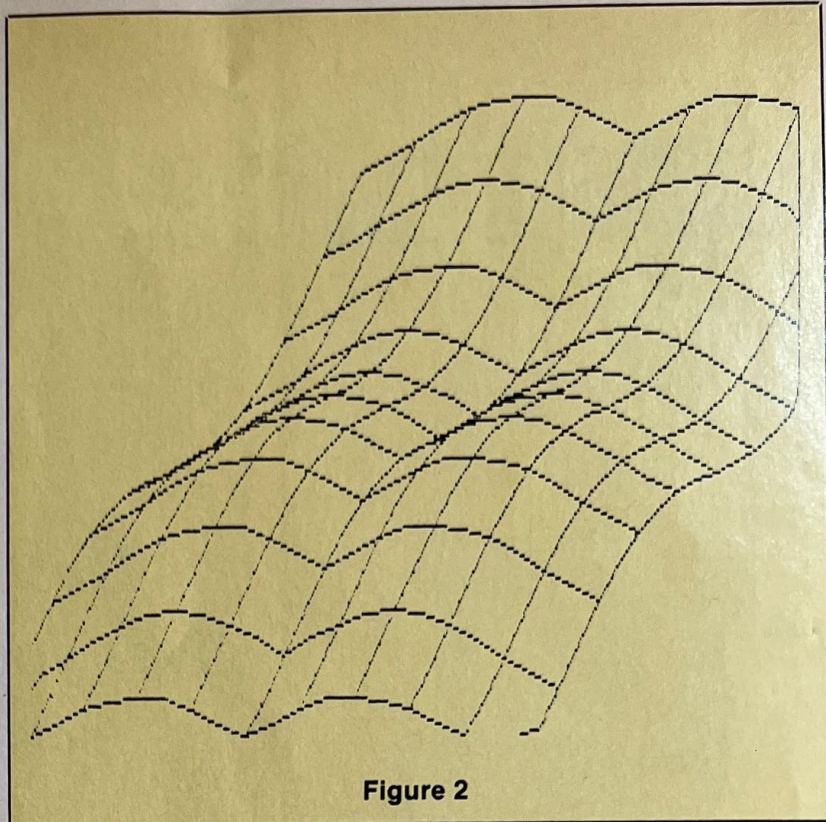


Figure 2

The listing:

```

1 ' Screen dump for Sanyo MBC 555 and Epson FX-80 printer.
2 ' By James K. Hardy
3 ' Lines 10 and 20 should appear at the start of the program, the rest is
4 ' the subroutine that is called (Gosub 1000) when ever a screen dump is
5 ' desired. Note: the picture is rotated 90 degrees.
6 '
7 '
10 DEF SEG=&HF400:POKE 0,192:PRESET(0,0):IF PEEK (0)<64 THEN LOCATE 25,1,0:
    PRINT:GOTO 10 ELSE CLS
20 DEF SEG = &H3C00:'FOR GREEN
30 'change line 20 to def seg = &hf0000 for red
40 '                      = &HF400 for blue
100 CLS
110 SYMBOL(0,0)," Test of Screen Dump Program",2,4
120 LINE (200,100)-(400,120),,B
130 CIRCLE (400,100),80,0,1,.5:PAINT(401,91),2,2
140 LOCATE 25,1
1000 ' screen dump subroutine
1010 LPRINT CHR$(27);"1";
1020 FOR K=0 TO 316 STEP 4
1030 LPRINT CHR$(27);"K";CHR$(144);CHR$(1);
1040 FOR I= 15683 TO 3 STEP -320
1050 FOR J= 0 TO -3 STEP -1
1060 LPRINT CHR$(PEEK(I+J+K));
1070 LPRINT CHR$(PEEK(I+J+K));
1080 NEXT J
1090 NEXT I
1100 LPRINT
1110 NEXT K
1120 LPRINT CHR$(27);"0"
1130 RETURN

```


Software review

BASIC Enhanced — A Nice Addition to Sanyo BASIC

After first using Dean Brown's enhancement to Sanyo's BASIC, I was so impressed with its performance and utilitarian value I couldn't resist writing this review so others who love BASIC programming would be aware of the nifty additions this program makes to regular BASIC.

BASIC Enhanced adds about 17 new features to any version of Sanyo BASIC. Some of them are not useful to me, but others turned out to be extremely handy. The best is the addition of a SEARCH statement, which will instantly list every line in your program containing whatever you search for. The lines can be listed on the screen, or to the printer by simply appending a ,P to the search element.

SEARCH"INKEY\$",P will print to the printer every line in your program in which you have used the INKEY\$ statement. Similarly, SEARCH"F" will find every 'F' in your program, whether it be a variable or part of a word. To find the variable alone, you could use SEARCH" F " instead. Not only can you search, but you can search and replace.

The syntax for this function is ... SEARCH"string1" [, "string2" [, start-[end[,P]]]]. String 1 is the string for which you want to search. String 2 is the string you wish to use to replace String 1. Start is the line number to start the search. End is the line number where the search is to stop. 'P' is appended if you want the lines to go to the line printer. The braces [] indicate that this part is optional, and not required in all cases. You can see how valuable this would be to test COLOR changes, or to temporarily change all your LPRINTs to PRINTs or vice-versa. There are so many uses I just can't describe them all here, but this feature is invaluable. I have a habit of writing pretty filled-up lines and have a heck of a time searching through a printed copy or a screen listing to find something I may want to change, but SEARCH will find it for me.

Probably the next best statement added by *BASIC Enhanced* is the SORT statement. The SORT will sort 500 strings in about two or three seconds. It will sort both alpha and numeric data in either ascending or descending order. It will also carry along any amount of tag arrays. The statement SORT 100,A\$(1),Z will sort 100 items in the A\$() array, starting with element number one, and carry the Z() array along. The simple addition of a minus sign (-) before the A\$ will tell BASIC to reverse the sort order. The SORT is extremely versatile, and you'll find you can do things with it that were virtually impossible before, and there is no limit to the key or tag arrays you can sort.

Another very useful addition is the ability to change the logged-on drive, either from the keyboard or in your program, with a simple DEFDRV"B:". Also, Mr. Brown has added the mysteriously missing SHELL command in Sanyo's BASIC — another very useful item. And for those who may have

graduated to the Sanyo 555 from one of the early Radio Shack computers, another interesting feature is that you can now EDIT using the same procedures you used to use (or maybe still do) in your Model I, Model III or Model 4 computers. All this can be done without disabling the standard method of editing normally used in the Sanyo. A very interesting feature of the EDIT statement (or the SEARCH) is that if you have a program resident that was saved using Sanyo's Q option, invoking either an EDIT command or a SEARCH command will automatically unlock the program so it may be resaved, listed or edited in the standard way.

There is also an HCOPY statement, that gives you a printout of the screen to your printer (just ASCII, not graphics). The HCOPY statement is quite useful to add printout capability of information that your program may print on screen without adding the familiar LPRINTs. For those who would like to hear your Sanyo make some kind of noise other than the familiar "stepped on frog" noise, there is a SOUND statement. Nothing like the New York Philharmonic, but one heck of an improvement. You can make sounds from around the 20 Hz mark to well above human hearing — very useful for games or just to add a more pleasant sound as an attention getter in any of your programs.

The syntax for sound is ... SOUND frequency,duration. The duration is measured in 1/100 seconds. Thus the statement SOUND 1000,200 would make a 1000 Hz tone for about two seconds.

There are also several statements that allow you greater access to the powerful subdirectory feature of MS-DOS 2.11. These are CHDIR[\$] to access various directories, MKDIR to make new subdirectories, and RMDIR to remove them from your disk. Another "goodie" is the DSKF(n) statement, which will show the free space remaining on any drive — useful to prevent you from saving a program to a disk without enough space to hold it.

This covers *most* of the nifty features in *BASIC Enhanced*, but there are still a few more that I have yet to investigate, such as ENVIRON and BASIC/S. Also, Mr. Brown has found a few bugs in the Sanyo BASIC that he has corrected, and if you're a BASIC programmer, you can certainly see where this package would be invaluable. I even use the SEARCH facility to find things in programs written on my Tandy 1000 by saving an ASCII copy, loading it into the Sanyo, and then doing the SEARCH. It will still find things, even though the program it is searching will not run on the Sanyo if it contains statements strange to the Sanyo's vocabulary. The program comes neatly packaged with a small but well-written manual thoroughly covering all the features.

Try it — you'll love it.

(Michigan Software Distributors, 43345 Grand River, Novi, MI 48050, \$49.95)

— Max S. Worthington

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Chuckle Pops Offers Welcome Relief

Every once in a while it happens. Someone comes along with something so different and unique that you just sit back and say, "Wow!"

Lotus Development did it with *1-2-3*. The idea of a spreadsheet and graphics was unique for its time. Digital Research's *GEM* software is the same way. Borland International's *Sidekick* rated the same kudos and started a wave of memory-resident programs that is yet to be abated.

OK. So these are some pretty heavy hitters. But there are a lot of others that are "just the thing" to make living with a computer a real joy. And when we see them, we have to tell someone about it. Right away.

Enter *Chuckle Pops*.

I absolutely adore jokes. And jokes are what *Chuckle Pops* is all about. This is a memory-resident program that pops up a joke whenever you need a laugh. There are a couple of hundred jokes in *Chuckle Pops* (and most of them are pretty good) and you can add in your own as well! Rumor has it that there will be new joke disks available, too.

All that is not the point. What the point is is that everyone needs a laugh from time to time. While in the middle of a spreadsheet, a complicated chart design or whatever, all you need to do is press ALT-J (for joke, get it) and a window pops up on the screen to give you a chuckle.

No, *Chuckle Pops* won't set the world on fire, but for \$14.95, who can't use some respite from the serious work he or she does with an MS-DOS machine? It works with the 675, 775 and 885. And it works well. Even gives colored windows with a color monitor.

In addition, I have three other memory-resident programs loaded at the same time as *Chuckle Pops* with no conflict.

Try it — you'll like it. And, in the meantime, did you hear the one about . . .

(Enlighten, P.O. Box 2037, Ann Arbor, MI 48106, 1-800-447-1771, \$14.95)

— Lawrence Falk

The Great Communicator — A Useful Telecommunications Program

Interested in moving into the information age? If you've got a serial port and a modem on your 55x, there are a dozen different telecommunications programs on the market that will allow you to make the connection. *The Great Communicator (TGC)* by Information Technology and Consulting is a high quality telecommunications program that sells for only \$29.95.

I own several other telecommunications programs and was really interested in doing the review. The program comes with a well-written but austere-looking manual. Once I got into it though, the austerity didn't matter and I began to enjoy reading it. For those with little or no background in telecommunications, the first chapter is really an excellent introduction to the subject.

The program is usable under DOS 1.XX or DOS 2.XX and on machines down to 128K of RAM. Most of the features of the program are similar to those of other terminal programs and include: dynamic setting of the communications parameters, DOS level utilities and commands accessible from within *TGC*, file transfer, file capture to disk, printing of the incoming transmission, a telephone directory, an ASCII file send and an ASCII screen dump. I will discuss each of these features in turn.

The communications settings are simple to change and I was pleased to see Baud rates of up to 4800 Baud (useful for null modem transfers between two machines). Also available from this menu is a help screen if you need it. The availability of utilities from within *TGC* is a real plus. Included here are the capability to type (a screen load at a time), print, delete or copy a file, get a disk directory and execute any DOS command. The last feature is particularly nice since you can actually go back to DOS level, execute a series of commands, and then return to *TGC* by simply typing EXIT. Nice touch.

The file transfer options are complete and well-documented. There is, once again, a primer on file transfer and protocols that is well-written and educational. I-Tech does an excellent job explaining VRC, LRC and CRC (Vertical, Longitudinal



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and Cyclical Redundancy Checks) in easily understood terms and then explains how they can be used in doing file transfers using MODEM 7 protocols on single or multiple files using either checksum (LRC) or CRC error checking. Another nice feature is the ability to change the default drive from within the file transfer menu. Between these options and those for ASCII send and file capture, you should be able to send and receive files from just about any computer system, be it micro or mainframe. I did try an ASCII file transfer to a local minicomputer and it went without a hitch. I did not have a chance to do a protocol transfer, which I really wanted to try, especially the multiple file transfer.

The printer and file capture options are identical to those found in other terminal programs; both of these seemed to work well. The telephone directory feature allows you to add, change or delete up to 24 different systems, phone numbers and communications parameters. Once you're into this menu, you can specify any of the systems you have in the directory and the program will change the parameters to the correct ones and then dial the phone for you, assuming you have a Hayes-compatible modem. I had some trouble adding new systems to the directory here as neither the RETURN nor the arrow keys would allow me to make entries. The problem was intermittent and may have only been a problem in this release of the software, but I couldn't tell.

A note on something that's missing here, and that is a macro capability. With a macro, you can store whole dialogs or commonly used phrases in keys which you can send or execute with a single keystroke. The most common use for macros is to conduct a sign on dialog with another computer, including the prompt characters as well as the responses so your logon can be totally automatic. *TGC* does not include macros and I think they would make an excellent addition.

The other feature that would be nice is emulation capability. Some of the best terminal programs I have seen allow you to have your micro behave like a particular terminal so you can take full advantage of some of the features available on some large systems (such as full screen editing or one keystroke commands). Another example of an emulator is the Tektronix emulator I run on my Macintosh at work to communicate with the VAX elsewhere in the building. As far as the VAX is concerned, it's talking to a Tektronix graphics terminal and the graphics capability is really worth a thousand words. I recognize that terminal emulation is normally reserved for the higher priced software, so to be fair, I wouldn't expect it to be included in a \$29.95 package. For instance, the price of text-only terminal emulation software is generally around \$100, while the graphics emulator I spoke of is \$150 to \$200. Nonetheless, text terminal emulation would be a feature that would make this package a terrific value at \$50 or less.

The last feature is an ASCII screen dump, which is really a nice feature on a machine that doesn't include this feature in its DOS. I use several other systems daily that all feature a screen dump key sequence and I really miss this. There are, of course, third-party operating systems that include screen dumps, but this is still a nice feature considering it's free.

All in all, I enjoyed this review and recommend *TGC* to those who are looking for a competent, inexpensive terminal program. The features are excellent and you won't miss any of the ones I mentioned if you don't really have a need for them. The documentation is well-written and very informative. One last note is that I-Tech plans to market an IBM PC/XT version in the near future. If you know someone who has a PC or a clone, maybe you can recommend something to him for a change!

(Information Technology and Consulting, P.O. Box 554,
Coventry, RI 02816, 401-822-4338, \$29.95)

— Bill Chang

Software review

Checks & Balances — Fast & Friendly

Counselors have long told us that one of the most frequent causes of disharmony in the family is money. *Checks & Balances*, a financial management program from CDE Software, does not guarantee healthier relationships within the family. But faithfully used, it lets you know where your money went, how much you've got left and how much you owe, as well as keep track of all your tax-deductible expenses. It may not cure the "too much month and too little money" syndrome, but it's a start.

Checks & Balances is a feature-laden program that is versatile enough for use either at home or in conjunction with a small business. It will keep track of multiple checkbooks, categorize your income and expenses for the IRS, track your budget, print checks, look up any transaction and provide a wide variety of reports.

It is not a perfect program by any means, but it is fast, capable and extensively documented. After using it for both home and business expenses, I am very impressed.

The documentation is quite complete and well-organized. The 180-page manual begins with a "quick-and-dirty" introduction for people who don't like to read manuals and are impatient to get into the program. This is well-done with just enough information to get you working with the program.

The rest of the manual is divided into four sections: Basic (i.e., Elementary) Operation, Advanced Features, Appendices (Check Forms and Sample Reports) and a Summary of Commands. It is a clear and helpful format. However, there was one glaring omission: It has no index! Early on I ran across something in the manual and haven't been able to find it again. Consequently, I spent more time scanning both the table of contents and the manual itself than I liked. Even though the documentation is well-organized and sports a detailed, three-page table of contents, a quality full-featured program like this needs a thorough and complete index.

The manual folds flat and stays that way. However, the publishers have crammed three-quarters of an inch of paper into a binding obviously meant to hold less than that. Although the content of the manual was clearly and carefully written, the numerous typos don't give a good impression.

Checks & Balances is command-driven and is very fast and responsive. Excellent help screens make ease of learning and operation quite simple for a program of this complexity. Even when I hadn't used the program for a month, getting back into it was not at all difficult. Several demo files are provided for use while you are learning the program and getting data organized.

The data entry form in *Checks & Balances* is well thought out. It allows checks numbered to 999990, a payee field of 39 characters, amounts to \$9,999,999.99 and a memo field of 45 characters so you can be very detailed about your transactions. As you might expect, it also allows you to mark which checks have "cleared" in order to reconcile your records with the monthly statement from your bank.

Getting the check writing and formatting set up the first time was an exercise in patience for me. But once the check format and printer were set up, writing checks took little time at all. However, if you're going to write only a couple of checks, it would be quicker to do it manually. One thoughtful touch: Various check formats are included in the documentation, along with details for ordering the checks themselves.

One of the built-in "extras" of the program is an excellent "Rolodex-type" database for all of the check-writing details.

It references payees by name, account number, phone or memo. It also writes address labels, envelopes and in general serves as a simple database for whatever you might wish to keep track of.

I suspect that most of us will use *Checks & Balances* primarily to record and categorize our expenses for income tax purposes. In the past three years I've used three such programs (one each year) to track and report my expenses and income. *Checks & Balances* is the best of the three.

However, when I first began working with *Checks & Balances* I was tremendously disappointed. The program I'd been working with most recently had the capacity to handle 250 expense and income categories. The documentation for *Checks & Balances* said it could handle 64 "defined categories." At the time I was using 112 categories!

Since then I've discovered three things about *Checks & Balances* that have alleviated my disappointment:

First, it allows an unlimited number of undefined categories. The difference between a "defined category" and an "undefined category" is that only defined categories may be given a 31-character explanation. They may also be budgeted, whereas undefined categories cannot.

Second, within each "defined category" you can establish and generate reports and totals on several subcategories. For example, even though we have all of our automobile expenses in one category, I can easily generate detailed or summary reports and totals on all auto expenses, or just the cost of gasoline for car number 1, gasoline for car number 2, or the cost for both cars, etc. So in effect, the 64 defined categories limitation is no real barrier at all.

Third, although *Checks & Balances* allows only 64 defined categories, an advanced utility command allows you to define as many categories as required in sets of 64 categories per set.

There is one other plus in this regard. The 64 categories with the four-character abbreviation and a 31-character explanation are on-screen 16 at a time. These flip on/off the screen with a single keystroke, so you don't have to worry about losing or keeping handy a hard copy list of accounts. It is a simple matter to customize the categories, abbreviations and explanations to your own needs, as well as print out a list. The freedom to have four-character abbreviations and lengthy explanations of each account was a real joy. I could assign meaningful and memorable names to the categories and was not limited to account names cryptically abbreviated with a two letter key, or worse yet, a number you have to look up repeatedly.

One additional feature I appreciated was the ability to search the ledger for names, numbers or other items. When I'm unsure if I've entered an item, or if I need to make a correction, it's a simple matter using the search command. However, the search function requires an exact match, including capitalization: e.g., "WordStar," "Wordstar" and "WORDSTAR" are three different words. A search for "Wordstar" or "WORDSTAR" would not find "WordStar." In the *MicroPro* program, you can ask it to ignore the case of a word when making a search; in *Checks & Balances* there is no such provision. To get around that problem, I entered all data in uppercase but wasn't particularly pleased with the aesthetics of this alternative. Yet, it was that or risk not finding "ShopKo" if I searched for "Shopko."

Checks & Balances is able to provide almost any combination of reports you might ask for, including reports by the month or year, payee, category or subcategory and budget vs. actual. It also can provide a simple net worth statement. Reports are simple to generate, are well-formatted and can be sent to the screen or to the printer.

The program is highly forgiving. If I entered an unknown or inappropriate command, I received a simple reminder to re-enter the command. When I asked it to print but failed to turn on the printer, there were no problems. I was unable to make it crash or lose data, short of pressing Reset before exiting.

One advanced feature that could prove helpful is the ability to run "batch" files. If you find yourself doing the same set of reports on a weekly or monthly basis, it is possible to do that same set of commands anytime you wish with only one command. In addition, *Checks & Balances* may be used with a RAM disk or hard disk. Setup instructions are included in the documentation.

The program is not copy protected. I have 80-track drives and simply copied the program over with no problems at all. When you exit the program there is a simple but effective reminder: "Thank you for purchasing *Checks & Balances* and not giving away copies."

In summary, *Checks & Balances* is highly flexible, very fast and yet quite easy to use. The screen display and scrolling are the fastest I've seen on my Sanyo. With the few exceptions noted above, I'm very impressed. It's an excellent program.

(California Digital Engineering Software, 2463 McCready Avenue, Los Angeles, CA 90039, 213-661-2031, \$74.95)

— Larry L. Meyer

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PC STAT — An Easy-To-Use Statistics Program

PC STAT is a statistical analysis package that is designed to run on the MBC 55x series computers with MS-DOS 1.0 and above, 128K of RAM and one drive. This program will not run with the Video RAM Board.

The manual supplied with the software is simple and straightforward. If one follows the instructions and utilizes the supplied sample data files given on the disk, the application of this package to other problems should present no difficulty. The PC STAT package contains seven of the more commonly used parametric statistics. They are as follows:

- Independent Groups t-test
- Independent Groups t-test (with known parameters)
- T-test (comparing a sample mean against a population mean)
- T-test (repeated measures t-test)
- Analysis of Variance
- Correlation (Pearson product-moment correlation)
- Simple Linear Regression

A brief description of the above tests is given in the manual and it is recommended that these descriptions be studied in order to fully use and understand the power and range of applicability of these statistical procedures.

I found the package easy to use. The program, being menu intensive, provides the route to move through the data analysis. Editing of data is quite straightforward. It is apparent that the author gave thought to the care and handling of the generated data files. PC STAT contains error trapping procedures for data input and special provisions for the prevention of destroying established data files. After each calculation or analysis, the user has the option of printing the results.

In summary, the program is well-written and would deserve to be considered a viable purchase for those needing a software package for statistical analysis. The package provides a basis for those users wishing an introduction to the subject and those wishing to understand the relationship among the various statistical parameters. The only major problem is the inability of the program to be run with the Video RAM Board or any IBM compatible computer. This option would open a broader base of users for this particular package.

(Prickly-Pear Software, 2460 N. Conestoga Ave., Tucson, AZ 85749, 602-749-2864; \$49.95)

— Edward Champion

Market Trend Analysis has a Good Track Record

Market Trend Analysis for Serious Investors (MTA) analyzes and predicts general trends in the stock market. Input is the weekly and monthly stock market statistics (the Dow Jones data, interest rates, various technical market parameters, etc.) and output is the moving average direction of 20 market parameters, current trends, forecasts and timing information. It optionally averages for the past year 21 indicators, either in chart or graph form. Tabulated output is printed directly from the program.

The bugs found were the result of sending non-standard control characters to the printer. The program comes on a single-sided disk with a 13-page manual, a few pages of sample input and output, and a chart giving the program prediction output over a four and a half year period. The documentation is fair, but could be significantly improved.

MTA is a Sanyo BASIC program (MKTANAL.BAS); it is approximately 59K long, and is provided in a form that is unlistable (SAVED with the "Q" option). Also provided is an 18K data file (DATAFIL) made up of the requisite data from the year prior to the date of shipment, which is needed to run the program. As written, MTA requires two single-sided disks and at least a 192K memory (all testing was done with a 256K memory system; the 192K figure is based on my calculations). MTA is one of the few serious business oriented programs written for the Sanyo. According to the author, the size of the program and data arrays preclude adapting the program to IBM or GW-BASICS without a major rewrite (a rewrite is currently being considered by the author) to get around the limitations of memory usage in the IBM-type BASICS, limitations not present in Sanyo BASIC. Yes, there are important things that Sanyo does better than IBM!

MTA is a significant addition to the investor's tools. Used properly, it gives an investor an additional criterion to use in buying and selling decisions. Like all such technical information, it should be used carefully and with thought, not just mechanically. This program does *not* tell you in which instruments to invest, nor does it keep track of your gains and losses.

BASIC is loaded and then MKTANAL.BAS. DATAFIL must be on the disk in Drive B, and the program is run. After some preliminaries (copyright, identifying yourself and a series of graphics) a menu appears. To proceed, first have the market data for the week following the shipment date of the program. Barron's Weekly has all the data needed except the Margin Requirements and the Bank Reserve Requirements. Aside from the date there are 33 variables that must be entered: most weekly, some monthly and some entered when changes occur (e.g., change in Bank Reserve Requirements).

With the numeric keypad locked "on," the data is easily entered as per manual and instructions, and the program does all the calculations and displays the moving average summaries for the week. This screen can be sent to the printer (see below). Then you may request tabular output of the past year's three-week moving averages for a number of primary and derived indicators. Once you are past the first output screen and the past year's moving average output, you cannot return to them, a consequence of how MTA handles and stores data.

The next screens display the "Analysis Results-Status/Trend/Forecasts" and "Analysis Results Market Timing." The first gives an average rating of all the indicators for market and interest rates as well as their forecasts, in terms of percent possibility of market prices or interest rates rising. Comments in the timing screen are in terms of buy, hold and sell signals,

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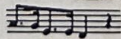
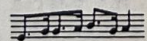
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and a comment is given concerning the strength of the indicator (e.g., Bullish, Bearish, Extremely Bearish). These screens may be sent to the printer and may be reviewed.

Finally, a graph of any of the indicators and the program predictions may be displayed for the period of the last year. The graph may be sent to a graphics capable printer via the Sanyo supplied screen dumps for Epson or Okidata printers, or their adaptations. *MTA* has no built-in provision to send the graphs to a printer. When done, you may proceed to the menu where you can save the data as the new *DATAFIL* (this new *DATAFIL* is needed for the next week's data).

There is no provision to return to the data in the program; once you have passed through a major phase of the program you cannot return to that part. I recommend users save each week's data separately on a disk with some name keyed to the data. I used "Dmmddy.DAT" and found that I would need three disks per year. The menu also has options to examine the data categories — not the same categories used in input since data is saved as derivative functions, and to change the data in the array, also the derivative data.

Criticism of the program is rather clear-cut. First, the output to printer does not work exactly right. The first letter of all the headings is chopped off on my C.Itoh 8510, apparently a result of the program using a CHR\$(30) to signal enhanced print (not the correct code for the 8510). Second, the program has a 10-second delay for the copyright notice and a 50-second delay between the request for identification and functional operation with some fancy graphics using the SYMBOL command. After the first use, these graphics get tedious; they can be annoying to the serious user. To avoid the graphics, identify yourself as EL HEFE. The menu will now have an extra option, #6, which allows you to build a database from scratch (not very useful for the general user, ignore it). Third, as written, the programs require a "B:" disk drive for *DATAFIL*,

but even with single-sided eight-track disks there is enough room to hold *MKTANAL.BAS*, *BASIC.EXE* and *DATAFIL* on a single disk. A simple change would allow the user to define the disk to be used for *DATAFIL*, and would allow single disk owners to use *MTA*.

Another criticism is the inability to move in any direction except forward. This keeps the user from entering data, turning to non-market tasks, then returning to view the output. Also, output cannot be reviewed after you have passed that part of the program. When the data is saved as the updated *DATAFIL*, the old data is gone. The author has chosen to keep all data as derived data (the results of the calculations) for several reasons: Allowing the user to move back and forth adds a lot of code to a 59K program, while keeping the file as primary (entry) data would entail many more calculations at every stage of the program and slow it down considerably. I was annoyed at not being able to go back and review the data, look at a prior week's run without entering the last week's data or move back and forth in the program, but the annoyance soon abated.

To discuss the value of *MTA* to the investor, first look at the way it works and how the program analyzes data to make a prediction, then look at the history of its predictions. Unfortunately, the documentation does not explain in much detail how the program arrives at its analysis and predictions. A call to the author, A. Roselli, helped a bit. Apparently the program was developed by statistically analyzing how well certain market indicators predicted market behavior (defined apparently by the Dow Jones Industrial Average, an indicator itself).

Each indicator is calculated from the input data, its moving averages (26-week, 18-week, 12-week, six-week and three-week) are figured and a rating assigned considering its trends. These ratings are then weighed, and status and forecasts are made for the market and interest rates. The market timing outputs are calculated in a manner differing from the predictions and the status reports. The analysis is statistical in nature, not intuitive. If earnings of all Dow Jones stocks were to rise, but the Dow itself not rise, one would see a decrease in the P/E of the Dow. Intuitively, one would expect that this would predict a rise in the Dow, but the program sees this as a slightly more bearish-in-market status and seems to ignore it in its market predictions; it does, however, make the *interest* rate rising prediction increase.

The fundamental prediction, the "Possibility of Stock Prices Rising in Future," is given as a percent. Roselli suggests another important indication of a change in market direction is the "A/D Line." If the direction of the Dow and the A/D Line are "inconsistent," the program warns you a change may be coming, although the change may be in the A/D Line, not the Dow. The value of the A/D trend is a major factor in the fundamental prediction. The quality of the input data affects the output, but how good the data must be is *not* made clear in the documentation. I found all the data in *Barron's*, but there are some ambiguities: Should the money supply given at the end of the week be used in that week, or in the data of the previous week to which it refers? Which three-month T-bill figure should be used, that given in the Money Rates column, or in the Economic and Financial Indicators column (they often vary a bit), etc.? How sensitive are the results to these ambiguities? A check shows that a difference in the prediction of about five percent may occur if all the data is the "wrong" stuff (referring to the wrong date and/or wrong choice of data), thus these type of errors are not fatal. A significant typing error did change the predictions for quite a while, since it was carried through in all the moving averages used to spot trends.

Not clear in the documentation is the relationship between two indicators that are coupled in the calculations, but may be reported at different times: the Customer Margin Debt and the Customer Free Credit Reserves. If a new (monthly) value appears for one but not the other, wait a week until the other

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appears before entering them; entering this pair at different times may introduce a significant error that is not self-corrected. Not every investor will be familiar with all the indicators used. The documentation should give a better definition of all the calculated indicators (such as A/D Line or the Prolonged Liquidation Data), or at least give a reference to where their definition or formulae may be found in the literature.

MTA is a black box that claims to predict the stock market indicators. No matter how good a track record, always approach a crystal ball cautiously! And *MTA* seems to have a good track record. The documentation comes with the program's predictions plotted against the Dow from January 1981 to August 1985. The sell sign (three consecutive values below 12 percent) and the buy sign (three consecutive values above 60 percent) correctly anticipated every major move of the Dow by about three to nine weeks. I define a major move as a sustained change in slope (i.e., direction) of at least one month's duration.

Note that the predictions are given in terms of possibility that the market will rise in the future. This is a statistical analysis. When the probability is 60 percent-plus that the market will rise in the future, there still is a finite probability that it will not rise. The program's author apparently feels that the synergism of three consecutive 60 percent-plus values is more bullish than the numbers would imply, and similarly for three consecutive 12 percent or less values.

The review program came with data until September 1985, just as the stock market started its recent rapid rise. As a test, I followed *MTA* through December 13, 1985. A buy signal from January 1985 was still in effect and the market was wallowing around 1330 on the Dow. Just as the market started to rise, *MTA* gave an A/D Line warning, then the prediction of a rise fell to seven percent. Rather than give a sell signal, *MTA* quickly bounced back and has been fluctuating between

predicted rise possibilities of 40 percent and 60 percent. Nonetheless, the market status (opposed to forecasts) reports have been consistently bullish. The timing indicators have been very bullish. The program performed satisfactorily during this rather short test.

Before ending, I want to sound several warnings about statistical models. Statistical methods uncover correlations only, *not* cause and effect; having a predictive correlation does not mean, for example, the leading indicator will cause the market to change in the predicted manner. Markets are complex entities that change with time — some indicators may lose their statistical value, since the underlying forces that result in the correlations change. These changes may be abrupt or gradual. Apparently developed over a long period, including both bull and bear markets, *MTA* has been *tested* only during the bull market of the 1980s; it has not been tested during a bear market. Finally, even the most careful investigator may unwittingly choose data that bias the correlations.

Should you buy *Market Trend Analysis*? If you are a serious investor, I would say probably. The key words are "serious" and "investor"; if you don't do your homework seriously or if you want to use the program to speculate, you will be disappointed. Remember that you still have to choose the investment instrument (be it stocks, a mutual fund, etc.), and this program will be of no help there. Despite some documentation weakness, the program is reasonably easy to learn and use. I think it is a bit pricey for the Sanyo market. It is, however, rather inexpensive for stock market advice (good, bad or indifferent). If the program helps you correctly make buying and selling decisions, and proves its accuracy over a reasonable number of years, it is cheap; if it fails to help or is used improperly, it isn't worth its price.

(ElectriCom Resources Co., P.O. Box 51180, Raleigh, NC 27609, requires two disks and 192K byte memory, \$249)

— David N. Wexler

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How to Make *EasyWriter* Even Easier

By Bruce A. White

We all know we have a great computer. The software is great, too, especially the *EasyWriter* program. But the problem with bundled software is that we are orphans in the woods when it comes to getting answers to our questions. Usually, when you buy a software program it has a "help" number to call for 90 days or so. My dealer was as much help as a lump on a log; in fact, he gave me "help" that was more counterproductive than useful. And you can't even get the time of day calling the Information Unlimited Software number unless you're a dealer or pay for a subscriber ID.

Maybe you have had similar frustration. After using my Sanyo MBC-555 and the software for a few months, I feel I can pass along a few tips to save the beginning user some grief. The software I use the most is *EasyWriter* (Version 1.3), and I'll describe some tips on making this program easier.

I enjoy using *EasyWriter* more than *WordStar*. For the kind of work I do (mostly academic articles), using *WordStar* is like using a shovel to swat a fly — pure overkill. With *WordStar*, there is all kinds of distracting action on the screen and constant demand on the disk drive. With *EasyWriter*, you feel more like you're actually writing instead of being an appendage to a machine. The screen is much more "transparent," and you can work for long, peaceful stretches without the whirring of drives. (To make using *EasyWriter* even more enjoyable, disconnect the annoying beeper. Refer to pages 6-3 through 6-5 in the MBC-550 Series User's Guide.) I'm not saying *WordStar* isn't a great program — it is, and I can see why people get hooked using it. It's just that for most word processing jobs, *EasyWriter* is amply powerful and fast enough.

Now for the tips. After you're sure your hardware is "happy" with the software installation, erase the unneeded files on your working copy of *EasyWriter*. For example, erase the print files (use DEL *.PRT to do that in one stroke). Erasing

these frees up nearly 20,000 bytes on the disk. If you like, you can erase other files from the disk (other than the EWPRGM.COM file, of course). You have *EasyWriter* securely stored away on the master disk, so there's no point in tying up valuable space. Also, erase the .BAT file and rename the EWPRGM.COM file to simply EW.COM.

Create your own .BAT file using the *EDLIN* program (see pages 4-11 through 4-13 of your User's Guide). Don't include the time command, as the timer doesn't work properly in the *EasyWriter* program anyway; for all practical purposes, does it matter what time the directory says a file was created? Thus entry 1 in the *EDLIN* program will be DATE, and entry 2 will be EW.

Copy this AUTOEXEC.BAT file to the *EasyWriter* disk, and it is a cinch getting started whenever you want to use the program. All you have to do is boot the system and enter the date, and you're ready to write. (The index of the User's Guide lists the time command but not the date command. The date command functions, though, along with a built-in perpetual calendar. Just enter the numbers of the date, and subsequent requests for the date give back the day of the week along with the date.)

Now that you have plenty of work space on the *EasyWriter* disk, set the default disk drive to A: (#1), not B: as stated in the manual (see Page C-3). This simplifies things by letting you work with just one drive. Of course, as your expertise increases, or if you need all the space of a blank disk, or perhaps have a double-sided drive for B:, then set the default drive for B: or #2. Don't rush out for double-sided drives unless you plan to write books regularly.

Another tip is to protect or unprotect your files with the MS-DOS REN command. This saves time if there are several files you plan to revise during the same session. To unprotect all the files type REN *.EZP *.EZF; to protect them type REN *.EZF *.EZP. This is much faster than protecting or unprotecting each file individually in *EasyWriter*. Remember, when revising the files, you must have *twice* the space of the file you want revised available on the disk. If you get the message Disk(ette) Full. Press RETURN, the quickest way to solve this problem is to delete the file you want revised, then save the file in memory. A more cautious and

slower way is to save the file in memory on another disk. Then, when the file is revised the way you want, delete the unrevised file. (Note: the MS-DOS DELETED command erases "protected" files!)

This next tip saves time typing envelope addresses for personal or business correspondence. Make a "dummy" form containing your return address and several blank 'x' lines for the addressee and keep it in a protected file. All you need to do is fill in the appropriate lines. This is much faster than starting from scratch and worrying about measuring each time an envelope needs to be addressed. Here is a sample:

```
.pagesize=2
.margin=2
Bruce A. White
555 Sanyo Lane
Soft Sector, MB 40502
```

x
x
x

To use this form, simply press the CONTROL and right-arrow keys to land at each 'x', and type in the appropriate data for each line. You could keep one "dummy" for long business envelopes and another for shorter envelopes. These forms are well worth the little space they take up on your disk.

Did you know *EasyWriter* can be used to get around the MS-DOS "bug" in the suspend display function (see Page 4-20)? If you have a non-*EasyWriter* file you would like to see displayed on the screen, trying to stop the display with the CONTROL plus 'S' keys is a useless endeavor — the file rushes on to the end while you're still pressing those keys. One way to solve this problem is to put either an .EZP or .EZP extension on the filename, and then review it in *EasyWriter*. There you have the choice of pressing the 'S' key alone, which stops the display and asks whether you want to stop or continue, or pressing both the CONTROL and 'S' keys to suspend the display. To resume the display simply press any key.

By the way, when using the "Print Choices" function in the print/review mode, it is not necessary to stay in that mode to review the pages selected. You can return to edit mode and press the CONTROL plus '2' keys, and the pages of your choice will be reviewed. When the first page appears, you are asked Start Print? Go ahead and type Y; it says

Bruce White teaches deaf students at Gallaudet College in Washington, D.C. He used his Sanyo to write his dissertation for a Ph.D. in English.

Print even though you only want it to review. And in case you've wondered, yes, the "Print Choices" function is faster than scrolling from the beginning, almost twice as fast.

Once, after making corrections to a file I had "included" in another file, I kept getting messages saying my file couldn't be found, and that the catalog was full. Putting in other disks in an effort to save my revised file didn't stop these confounding messages. Using the "Link a file" function, I got something I don't think appears in the manual: a 'Z' with eight right arrows next to it. If you ever manage to get such a message (on the "File System Menu"), simply type B to break the links. Then you will be able to revise and save the file.

Even though I prefer *EasyWriter* to *WordStar* for my everyday writing chores, sometimes I do use *WordStar*. You may want to use one of *WordStar*'s special functions, or someone may give you a file to work on that has been created on *WordStar*. Can you use it in *EasyWriter*? Yes, with a few minor changes to make it easier.

The first thing to do is make sure the file has an extension *EasyWriter* will recognize, .EZf or .EZP. Otherwise, the directory display on the opening menu is liable to come up empty. (It's not necessary to delete or change these extensions

for use on *WordStar*, which lists all of the files on a disk regardless of extension.) Secondly, you have to change the margins to avoid all kinds of complications. When there is a *WordStar* file on display, you will notice the ruler line goes off the screen on the right. In fact, when you press the PF7 key (that is, SHIFT plus PF2), instead of the familiar

Left margin=0

Right margin=65

Indentation=0

you get these startling numbers:

Left margin=6682

Right margin=6682

Indentation=6682

To change these numbers, first type 0 for the Left Margin, 222 for the Right Margin and another 0 for the Indentation. Press PF7 again to put in the values you ordinarily use.

Here's a tip if you're thinking about upgrading your RAM from 128K to 256K. According to the manual (for example, see pages 9-2 and 9-3) the "number after 'Space Available' [in the Status Display] depends on your computer's memory." This does not mean if you

double the RAM, you will double the maximum file size. The maximum file size remains the same, even with 256K. If you want to increase the memory, don't do it just for *EasyWriter*. (Tip: Try a mail order source for the 4164 chips. You can save lots of money by taking off the cover and rear panel with a Phillips screwdriver and installing them yourself.) Actually, it's not imperative to get 256K for most word processing tasks. Doubling the RAM *really* comes in handy for graphics and for using programs like *CalcStar*.

A final tip is a piece of advice that's easy to ignore. Once in a while review the manual. Doing this refreshes your memory about functions you have forgotten are available. Also, be sure to check out all the articles and hints in *SOFT SECTOR*. As you become expert with *EasyWriter*, you will get greater and more efficient use out of the program, and some items in the manual that may not have made any sense before will suddenly become clear. The manual isn't perfect, but it's certainly one of the best of its kind.

I'll be happy to try to answer questions you might have, and am also eager to know of people I can turn to with my questions. If we can get together enough comments and suggestions regarding *EasyWriter*, perhaps IUS will consider them in preparing the next version of this fine program.



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Quick & Simple, a list manager program that lets you create files to store any type of information. *Quick & Simple* can print mailing labels as well as reports, and runs on the Sanyo 550 series and on Sanyo and other PC compatibles. The package sells for \$49.95. MichTron, 576 South Telegraph Road, Pontiac, MI 48053, (313) 334-5700.

* * *

SuperDirectory, a disk directory cataloging program that lists filenames, pathnames, attributes and user-supplied remarks. *SuperDirectory* also prints

directory listings in any of several formats. Runs on the Sanyo 550 series (with MS-DOS 2.11) or on Sanyo and other PC compatible systems, and sells for \$39.95. MichTron, 576 South Telegraph Road, Pontiac, MI 48053, (313) 334-5700.

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DC-10, a flight Simulation game designed to simulate the DC-10 airliner. The Simulation includes six major European airports as well as various navigational aids. Runs on the Sanyo 550 series or on Sanyo and other PC compatible systems, and sells for \$39.95. MichTron, 576 South Telegraph Road, Pontiac, MI 48053, (313) 334-5700.

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Media Master, a disk-to-disk transfer utility that allows reading, writing and formatting in as many as 70 different CP/M and MS-DOS 5¼-inch diskette formats. Available for the Sanyo 550 series with 192K of memory; double-sided drives are preferred. *Media Master* sells for \$39.95. Intersecting Concepts, 4573 Heatherglen Court, Moorpark, CA 93021, (805) 529-5073.

* * *

Specialist, a stock market trading Simulation that lets you assume the role of a

specialist in a single stock issue. Runs on the Sanyo 550 series with the Video RAM Board, as well as on Sanyo and other PC compatibles, and sells for \$89.95. V Ware, P.O. Box 3648, Altamonte Springs, FL 32701, (305) 260-0635.

* * *

Ace, an ensemble of utilities patterned after the utilities found in the UNIX operating system. Includes *BROWSE*, *CHANGE*, *CHMOD*, *CP*, *MSOFT*, *MV*, *SEARCH*, *SPLIT* and *UNIQ*. Runs on the Sanyo 550 series; all except *BROWSE* also run on Sanyo and other PC compatible systems. *Ace* sells for \$34.95. Prickly-Pear Software, 2640 North Conestoga Avenue, Tucson, AZ 85749, (602) 749-2864.

* * *

DataFlex, a database applications development system that includes a menu system, relational database, command language, forms processing system and other features. *DataFlex* runs on Sanyo and other PC compatible systems with at least 256K memory, and sells for \$995. Data Access Corporation, 8525 SW 129 Terrace, Miami, FL 33156, (305) 238-0012.

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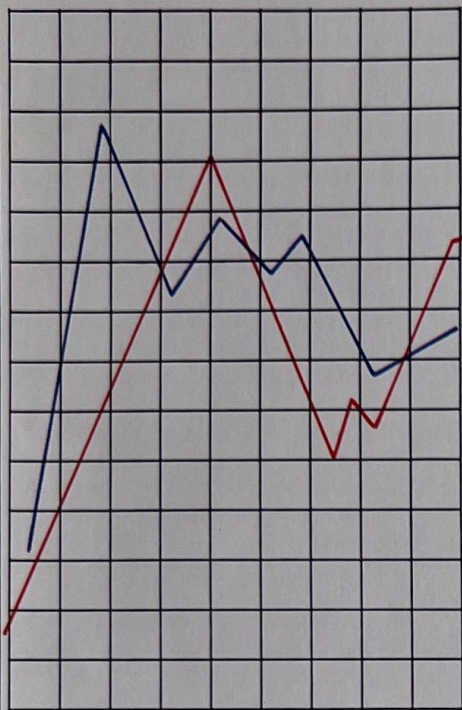
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Q. How do you get rid of the '<' and '+' at the end of a line so a paragraph can be re-formed? Also, how do you run a program on WordStar?

C.C. McClintock
Greensboro, NC

A. The easiest way to eliminate the '<', which indicates a carriage return (pressing RETURN), or '+' (indicating a line wider than the margin) from the end of a line with WordStar is to go to the end of that line and use ^G (CONTROL-G) to delete spaces or characters. After you have eliminated the unwanted returns, do a ^B (CONTROL-B) to re-form the paragraph. One thing you should not do is type RETURN as your line reaches the right margin of the screen. WordStar automatically performs the word wrap necessary to justify the text.

You do not run a program on WordStar; you can run a program from WordStar. The program listing included with your letter is not intended to be run from inside WordStar but to be run on a WordStar text file from BASIC. The program removes some of WordStar's text formatting so you can type the file to the screen and have readable text, which cannot be done to a standard WordStar file.

Q. I am curious. I read that you can't install an 8-MHz processor without causing trouble because of some 4-MHz chips on the MBC-550 motherboard. If this is true how does A-OK use 8-MHz chips on their memory board? Also, is it practical to install 256K RAM chips on the motherboard? I know there is at least one pin different. Is it possible to run two RAM disks so one of them can be used as a print buffer? Where can I get the power requirements for TEAC 55F drives? I want to remove mine from inside the computer because with a Video RAM Board, RS-232 board, memory board and clock board I don't think I will have enough power. I would like to build a new internal power supply.

John A. Hornung
Republic, MO

A. I have never seen RAM-disk software that allows two RAM disks to run at the same time — one for files and the other for a print spooler. Possibly one of our readers has some information they would like to share on that.

There is no benefit to installing an 8-MHz processor in the Sanyo MBC-550 series because the processor does not control the speed of the computer, a timing crystal does. Memory chips faster than standard 250us are not any benefit because the system clock has control over memory, also. You cannot just install 256K memory in the Sanyo because there are many considerations other than just the one extra data line on the 256K RAM.

I suggest you do *not* try to make a new, more powerful power supply for your computer so that all of the accessories you have can be run. If you are concerned about enough power for the drives you plan to remove and run externally, you can buy a standard full height floppy case with power and install the stock drives in it.

Q. When I use MailMerge my letters don't start at the top of the page. They also don't start at the same place as they continue to print: each letter starts farther and farther down the page. I place the .PA command on the line following the end of the text, then press ^QY and ^KD. I have tried everything I can think of. Can you help?

Douglas White
Cimcom Systems
Fairfax, VA

A. I use MailMerge all the time and do not have a problem with "pagecreep." The only thing I do not understand about what you are doing with MailMerge is the ^QY after the .PA command for page break. There is no reason to delete the carriage return, which may be causing your problem. If you are still having difficulty, please send a disk with samples and I will try to find the problem.

Q. I am using an MBC-550 with extra memory and a color monitor. I am trying to use an accounting package from James River Group. My problem is getting my Okidata Microline 182 to print 132 columns in condensed mode. I have called James River Group and Okidata; everyone agrees that what I am doing should work, but I still get extra line feeds (double spaced text) and lines that wrap around too soon.

Kathleen L. Hellwitz
Ojai, CA

A. I have checked with an owner of a printer similar (not the same model) to yours. The only solution we can come up with is that you will have to set the right margin of the printer to 132 columns before running the software. The information on how to do this is in the printer manual.

This should prevent the wraparound and the double spacing problem you are having. If this does not help, we suggest you continue to contact James River Software.

Q. I have a Star Micronics SG-10 printer and would like to get as many of the features as possible to work with WordStar. I notice that you refer to articles in the September 1984 issue of SOFTSECTOR; how can I get this article as I have not been able to find it? What is the best way to install my printer?

Gordon Hays
Beaufort, SC

A. From the copy of the WordStar test file you sent in, it appears you have the printer installed correctly (as an Epson). You must remember the Star Micronics SG-10 does not do variable pitch or

variable height line spacing. These functions are available on very few dot-matrix printers and most cost over \$1,000.

The articles I referred to in the September 1984 issue are still available as back issues. See Page 59 of this issue for information.

Q. I have an MBC-555 and need some help with EasyWriter. I would like to use the NLQ (near-letter quality) feature of my Star SG-10 dot-matrix printer. No matter what I do, I cannot get the proper codes for NLQ to the printer. I have tried using CHR\$(27) "B" CHR\$(4), but it will not work even though this is exactly what is in the printer manual. I have gotten it to work by moving the DIP switch in the printer, but then I get NLQ all of the time, not just when I want it. Can you help?

Gary Bouland
Conyers, GA

A. The reason the code does not switch to near-letter quality print is because you are sending an incorrect code. ESC '4' in your manual should look like this — CHR\$(27);CHR\$(52) — for the IBM mode, and ESC 'B' CHR\$(4) for the Star mode should look like this — CHR\$(27);CHR\$(66);CHR\$(52). When

sending ASCII characters to the printer as control codes they must be converted to their decimal number. Try these and see if EasyWriter responds any better.

Q. Is there a way to have WordStar request a password as CalcStar does to gain access to my files? I am using the WordStar Version 3.3 that came with the MBC-555 computer.

Otto S. Matsch
Tacoma, WA

A. There is no way I know of for WordStar to request a password. The only way you might be able to secure your data is to use one of the encryption programs available. You would then have the problem of trying to find one that might run on the Sanyo.

Q. I have an MBC-555-2 with 512K of RAM. I would like to make a special working copy of WordStar on a RAM disk for all of the overlays as well as the data I am editing. Is it possible to redefine the SAVE functions ^KD and ^KS to not only write to the RAM disk, but to also write to a floppy then erase the data file from the RAM disk? This would save time

and prevent the mishap of forgetting to save the file to floppy before turning off the computer.

Paul Taylor
Glassboro, NJ

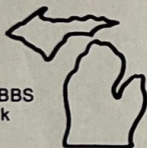
A. I feel that you are making a mistake in trying to keep WordStar, its overlays and your text file in a RAM disk. This is a sure-fire way to court disaster. There are two disk drives in the Sanyo computer and there is no good reason not to use at least one of them for your data. There might be some loss in speed, but this is much less costly than losing a large data file you have forgotten to save to floppy, or when the power goes out.

If you must use the RAM disk, then the easiest way to copy the data to a floppy (with WordStar set to save to the RAM disk) is to use the ^KB and ^KK commands to mark all of the text, then do ^KW to WRITE the text to the A: or B: drive with the filename of your choice. I do not know of any way to have WordStar do this automatically.

Q. In the March 1986 edition of "Business Sector" (Page 57) there was a letter from Edward E. Golden of Oxnard, California, who could not get Simon & Schuster's Webster's New World Spelling Checker to work on the MBC-550 series.



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I have the program and it works fine. There is a file on the disk called wspnews that contains the instructions to use the name "WSP2" as the filename to run the spelling checker on the Sanyo. I hope this solves the problem for Mr. Golden as well as others. Also, I have been trying to get MailMerge and SpellStar for use with my WordStar and cannot find them. Can you help?

Reba Morris
Springfield, VA

A. Thank you for furnishing the information about Simon & Schuster's Webster's New World Spelling Checker.

Here is the solution to finding MailMerge and SpellStar and for anyone looking for MicroPro software that they cannot find elsewhere. I have a catalog called "The WordStar Accessory Catalog," available from BroadReach, 534 Industry Drive, Seattle, WA 98138. They have what looks like every program MicroPro ever produced. Their prices are the best I have ever seen: MailMerge is \$49.95, SpellStar (CP/M only) is \$29.95 and CorrectStar is only \$49.95. The toll-free number for BroadReach is 1-800-641-1116. The patch to make CorrectStar function will be published in the near future.

Q. I can use as much speed as possible in computing-type programs that perform thousands of simple arithmetic operations. I understand Sanyo considered enabling an 8087 number processor chip in the MBC-550 series; what is the latest on this? I like to suppress page formatting when writing letters with WordStar. When I do this, the letter does not line up the same as when formatted. Is there another way to eliminate page numbers and keep the same page alignment? I use a Brother HR-15 printer and the super/subscript features add lines above and below my text; can this be eliminated? The standard tab settings in WordStar do not fit what I do. How can I change them to be more appropriate?

Samuel Yates
Delray Beach, FL

A. The Sanyo MBC-550 series of computers all have a socket for the 8087 number cruncher chip. The only thing needed is to install the chip and have software that will address it. The machine will not do this by itself, the software must.

It is not necessary to suppress page formatting just to delete page numbers; if

Submitting Material

Contributions to SOFT SECTOR are welcome from everyone. We like to run a variety of programs that are useful/helpful/fun for other Sanyo owners.

• **FORMAT:** Unless the program accompanying your submission is less than 10 lines, we must have the program itself on disk. We will print out the listing to our specifications. We simply cannot take the time to key in (and debug our typing errors) material that is longer. Editorial copy can also be included on disk, using any of the word processors currently available for the Sanyo 550, 555 or 775. However, please also include a double-spaced hard copy of your editorial material and hard copy of your program listing. Please do not send text in all capital letters; use upper- and lowercase. While it is a big help to us in typesetting to receive your article saved on disk using the ASCII option, it is not mandatory. But we must have, at the very least, a double-spaced hard copy of the article.

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you insert the dot command .OP at the top of your document, WordStar omits the page numbers.

You do not say what printer you have WordStar installed for, but your Brother HR-15 emulates the Diablo 1610. If you install WordStar for this printer the problem with super/subscripts printing on separate lines should be taken care of.

It is possible to construct a new ruler line for WordStar, which can be loaded just like a text file every time you want to use it.

Type two periods, then CONTROL-P, then press RETURN. This puts the cursor at the #1 column position. Now press the hyphen key for the desired ruler length. Insert ! at every location for tabs and # at every location for decimal tabs. When you have what you want, press RETURN again. You have now constructed a ruler that can replace the standard ruler. A small sample is below.

-----!-----!---#---#---

To make use of your new ruler put the cursor on the first hyphen then press CONTROL-OF, this replaces the standard ruler with the new one. If you construct the ruler and save it as a file, you will be able to load it in any time.

After you are finished, save the ruler on your WordStar disk as "A". This way you always have it available, even if you change data disks. To load the ruler from Drive A, type the following:

^KR WordStar will ask for the name of the file to read. Answer the question with the name of the desired ruler.

A:NEWRULER Then press RETURN

I suggest you also construct a ruler just like the default. This allows you to load the default ruler without having to quit WordStar to get it. You could call the original STD-RULE.

Q. On an Apple IIe with AppleWriter II I can change an entire paragraph from lowercase to uppercase with a control key. Is there any way to patch WordStar to do the same thing?

Alan Hitcher
Oloville, CA

A. There is no way to patch WordStar to convert lowercase letters to uppercase or uppercase to lowercase. That is a special routine built into AppleWriter II for the Apple IIe, not something just patched into it.

Q. I have an MBC-555-2 with both WordStar and EasyWriter. I use the software to translate foreign language text into English. The translations are paid for on the basis of the number of words of English text. Can either of these programs, preferably WordStar, keep a running count of the words in a text file? Thus, when the translation is finished, I would have a total word count rather than going through a sample count and estimating.

Philip M. Levin
Wilmington, DE

A. MicroPro has a supplemental program that does word counts, but the only way I know of to get it is to purchase the IBM version of WordStar Professional. WC.COM is a stand-alone program that is run from DOS on the file you specify. I'm sorry I don't have a better answer.

Charlotte Stone, office manager for the Detroit office of the Shaw/Walker Co., has been using a Sanyo computer in her daily work routine since October 1983. Brian Stone has been using a variety of Sanyo computers since May 1983. Both have been involved with computers since their first purchase in July 1978.



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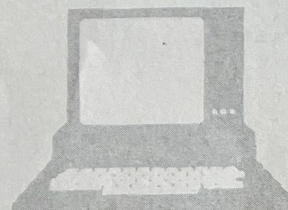
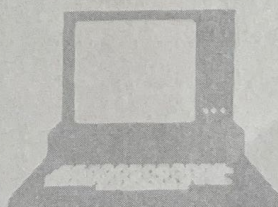
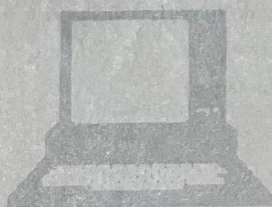
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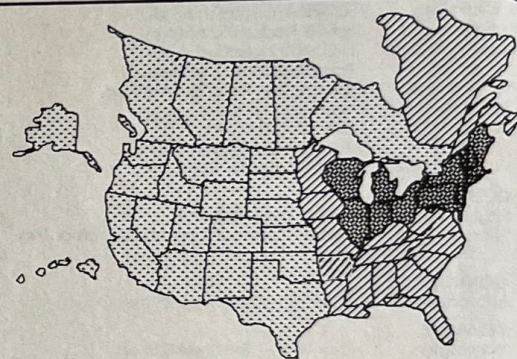
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That's right. We've decided that programs like *Sketch-It* and *Sanyopoly* aren't the only great ones around. There are also *Silver Streak* and *Star Trek* and *Some Like It Hot* — software of a different sort.

That's why we've published **VCR, The Home Video Monthly**, the magazine for the new generation of home viewers.

Home video has evolved beyond the "hacker" era, when you needed a degree in electronics just for a little entertainment. Most people don't care about how the signal-to-noise ratio and wow-and-flutter specs of their equipment compare to the latest models. They simply want to know how best to use and enjoy the equipment that they have.

And that is what **VCR** offers — how to get the very best in home entertainment from your equipment.

Each month, **VCR** brings you previews and ratings of every new offering on tape and disc: music videos, children's shows, how-to guides, and movies, movies, movies.

We tell you which shows the critics themselves will be taping on the networks and cable, along with tips from the experts on how to get the best possible reproductions. And you can turn to us for the answers to your questions, ranging from the trivial to the technical.

Even more, each month we feature exclusive interviews with the stars and the star-makers, along with articles designed to help you relive some of your fondest video "memories" of the past.

Yes, programming is more than spreadsheets and databases. And we know you'll want to be a charter subscriber to the guide to the very best in entertainment software.

VCR, The Home Video Monthly, made its debut in January 1986.

Mail to: VCR, The Falsoft Building, P.O. Box 385, Prospect, KY 40059

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